TRANSMITTAL

TO: USEPA

DATE: November 19, 2020

JOB NO.: 74571

RE: Newtown Creek – Treatability Study Pre-Design Investigation Data Summary Report

WE ARE SENDING YOU HERE WITHIN

If material received is not as listed, please notify us at once.

Quantity	Title
1-	Treatability Study Pre-Design Investigation Data Summary Report

REMARKS:

The Treatability Study Pre-Design Investigation Data Summary Report has been finalized and uploaded to Project Portal. Please let me know if you have any questions.

cc: NCG: Technical Committee
USEPA: Caroline Kwan, Mark Schmidt, Anne Rosenblatt, Stephanie Vaughn
CDM: Ed Leonard
NYSDEC: Ian Bielby
NYCDEP: Ron Weissbard
HDR: Chitra Prabhu
WSP/Louis Berger: Rebecca Tummon

Sincerely,
Timothy J. Olean
Technical Director

CONFIDENTIALITY

This material is intended only for the use of the individual or entity to which it is addressed, and may contain confidential information belonging to the sender. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reliance on the contents of this information is strictly prohibited. If you have received this material in error, please immediately notify us by telephone to arrange for the return of these documents.

Treatability Study Pre-Design Investigation Data Summary Report
Newtown Creek

Prepared for:
Newtown Creek Group
by Natural Resource Technology, Inc.

November 19, 2020

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

AOC	Administrative Order on Consent
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cm	centimeters
cm/s	centimeters per second
COC	chain-of-custody
CU	consolidated undrained
D/F	dioxin/furan
DGPS	differential global positioning system
DVR	data validation report
EOX	extractable organic halides
FOIL	Freedom of Information Law
FS	Feasibility Study
FSAP	Field Sampling and Analysis Plan
GGBFS	ground granulated blast furnace slag
GPS	global positioning system
HC	hydraulic conductivity
HSA	hollow stem auger
ID	identification
Inc.	incorporated
ISS	*in situ* solidification
KEMRON	KEMRON Environmental Services, Inc.
Kv	vertical hydraulic conductivity
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LEAF	Leaching Environmental Assessment Framework
MDL	method detection limit
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
NAD83	North American Datum of 1983
NAPL	non-aqueous phase liquid
NAVD88	North American Vertical Datum of 1988
NCG	Newtown Creek Group
NOAA	National Oceanic and Atmospheric Administration
NRT	Natural Resource Technology, Inc.
NYLI	New York Long Island
PAH	polycyclic aromatic hydrocarbon
PC	Portland cement
PCB	polychlorinated biphenyl
PDF	Portable Document Format
PDI	pre-design investigation
PP	pocket penetrometer
psi	pounds per square inch

PVC	polyvinyl chloride
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
QL	quantitation limit
RI	Remedial Investigation
RPD	relative percent difference
RTK	real-time kinematic
SOP	standard operating procedure
SPLP	synthetic precipitation leaching procedure
SPME	solid-phase microextraction
SPT	standard penetration testing
SRM	standard reference material
SVOC	semivolatile organic compound
TCLP	toxicity characteristic leaching procedure
TOC	total organic carbon
TPH-DRO	total petroleum hydrocarbon diesel range organics
TPH-GRO	total petroleum hydrocarbon gasoline range organics
TS	Treatability Study
UCS	unconfined compressive strength
USEPA	United States Environmental Protection Agency
VHG	vertical hydraulic gradient
VOC	volatile organic compound

1 INTRODUCTION

This *Treatability Study Pre-Design Investigation Data Summary Report* (TS PDI Data Summary Report) presents the data collected during the Pre-Design Investigation (PDI) as part of the Treatability Study (TS) field program for the Newtown Creek Study Area. The TS PDI is a step in the advancement of the Feasibility Study (FS), as presented in the United States Environmental Protection Agency (USEPA)-approved *Feasibility Study Work Plan* (FS Work Plan; Anchor QEA 2018). This work was performed consistent with the terms of the existing Administrative Order on Consent (AOC), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Docket No. CERCLA-02-2011-2011 (USEPA 2011). There are six signatories to the AOC, including the five members of the Newtown Creek Group (NCG) and the City of New York. The NCG is comprised of Phelps Dodge Refining Corporation; Texaco, Incorporated (Inc.); BP Products North America Inc.; The Brooklyn Union Gas Company d/b/a National Grid New York; and ExxonMobil Oil Corporation. This TS PDI Data Summary Report was prepared by Natural Resource Technology, Inc. (NRT), on behalf of the NCG.

The *Remedial Investigation/Feasibility Study (RI/FS) Report* defines Newtown Creek as forming part of the border between the boroughs of Brooklyn and Queens, New York City, New York (Anchor QEA 2020). It is a tidal inlet to the East River with no natural tributary inflows. It is approximately 3.8 miles long and comprises a main channel and five tributaries: Dutch Kills, Maspeth Creek, Whale Creek, East Branch, and English Kills. The TS PDI was performed in the TS Area, which is located in a slip within the East Branch of Newtown Creek, immediately upstream of the Grand Street Bridge (Figure 1). The TS Area is approximately 490 feet long by 100 feet wide at the eastern end and 120 feet wide at the western end, with a total area of approximately 1.2 acres, or approximately 54,000 square feet. The planned extent of capping, *in situ* solidification (ISS), and dredging for the TS are shown on Figure 2.

The *Treatability Study Work Plan* (TS Work Plan; NRT 2020 *{Note: not yet approved by USEPA}*) presents the rationale, approach, methods, and goals for performing the TS. Methods for work performed under this program are further described in the *Treatability Study Pre-Design Investigation Field Sampling and Analysis Plan* (TS PDI FSAP; Appendix C of TS Work Plan; Anchor QEA 2019a). Work completed as part of the TSI PDI followed procedures outlined in the FSAP, and methodologies outlined in the *Treatability Study Pre-Design Investigation Quality Assurance Project Plan* (TS PDI QAPP; Appendix D of TS Work Plan; Anchor QEA 2019b). Deviations from the USEPA-conditionally approved TS PDI FSAP and TS PDI QAPP were documented, and a memorandum summarizing deviations was submitted to the USEPA, which is included in Attachment A and summarized in Table 1.

1.1 DATA SUMMARY REPORT OVERVIEW

The TS PDI field activities included the following four field programs:

- Sediment
- Water
- Upland borings
- Surveys

The sediment program focused on characterizing the physical properties and chemical nature of sediments and underlying native material within the TS Area, and characterizing sediments to establish a waste profile for off-site disposal for those sediments that will be dredged during TS implementation. The sediment program also included collecting representative sediment samples to evaluate mix designs for ISS.

The water program focused on evaluating the chemical properties of porewater within the TS Area to support cap modeling, obtaining hydrologic groundwater and surface water level data to evaluate groundwater movement in the upland area, and measuring groundwater seepage within sediments.

The upland borings program focused on characterizing the geotechnical properties of upland soil to support the evaluation of the stability of bulkheads adjacent to the TS Area.

The survey program focused on identifying point source discharges to the TS Area, characterizing the current state of bulkheads adjacent to the TS Area, establishing ground surface topography adjacent to the TS Area sediment surface topography within the TS Area, and identifying and characterizing debris in the TS Area that may impact the TS design and subsequent implementation.

This document provides a summary of each field program, including an overview of data collection methods and results. Data, field forms, and photographs are included in Attachments B through D. Laboratory data reports and third-party validation reports are included in Attachments E and F, respectively. Data analysis and interpretation are not included in this document and will be presented in the draft *Treatability Study Construction Work Plan* (TS Construction Work Plan).

A data usability assessment is also included in Section 2, which summarizes data quality parameter measurements, data verification and validation procedures, systemic and sporadic data quality issues, and data usability and limitations.

2 DATA USABILITY ASSESSMENT

This section provides a summary of the documentation and evaluation of data quality and usability for data collected during implementation of the TS PDI. TS PDI data were assessed for usability based on the following multistep process outlined in Worksheet No. 37 of the TS PDI QAPP (Anchor QEA 2019b):

- **Step 1 – Review the project's objectives and sample design.** The data needs were identified to meet project objectives established in the TS Work Plan (NRT 2020) and that were successfully collected as part of the TS PDI field program.
- **Step 2 – Review the data verification and data validation outputs.** Data were validated per the TS PDI QAPP (Anchor QEA 2019b) requirements. Section 2.1 summarizes the data verification and validation procedures. Section 2.2 summarizes the overall quality assessment based on sample collection and documentation, calibration, precision, accuracy, bias, sensitivity, representativeness, comparability, and completeness. Section 2.3 summarizes the data quality issues found in this assessment.
- **Steps 3 and 4 – Verify the assumptions of the selected statistical method and implement the statistical method.** The sample design for the TS PDI field program was established to provide a dataset large enough to provide enough data points for statistical evaluation. For the geotechnical programs, the goal was qualitative; that is, it did not involve hypothesis testing or parameter estimation, so statistical evaluation is not appropriate. The successful completion of the field programs and collection of valid analytical data (Section 2.2) provides sufficient data to meet the TS Work Plan objectives.
- **Step 5 – Document data usability and draw conclusions.** The field teams adhered to the procedures in the TS Work Plan (NRT 2020), with the exceptions of approved field deviations. The laboratories and data validators adhered to the procedures and requirements in the TS PDI QAPP (Anchor QEA 2019b), with the exceptions of approved TS PDI QAPP deviations. Data outliers and assigned qualifiers are documented in data validation reports (DVRs) for applicable datasets. Data usability conclusions are provided in Section 2.4.

2.1 DATA VERIFICATION AND DATA VALIDATION

Data deliverables were provided by the laboratories consistent with TS PDI QAPP Worksheet No. 36 (Anchor QEA 2019b) and consisted of Level I or Level IV Portable Document Format (PDF) and electronic data deliverable formats. Data validation was conducted on all applicable data by Laboratory Data Consultants in Carlsbad, California, or by Anchor QEA, LLC, staff. Laboratory data packages are provided in Attachment E and DVRs are provided in Attachment F.

Data were validated following the procedures outlined in the TS PDI QAPP Worksheet No. 36. Analytical methods, laboratory Standard Operating Procedures (SOPs), and TS PDI QAPP Worksheet Nos. 12, 15, 19, 30, 24, and 28 provided applicable quality assurance/quality control (QA/QC) criteria (Anchor QEA 2019b). Best professional judgment was used when appropriate. Data qualifiers were applied following the most applicable criteria in the following USEPA National Functional Guidelines validation documents:

- *National Functional Guidelines for High Resolution Superfund Methods Data Review* (USEPA 2016)
- *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA 2017a)
- *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2017b)

Validation reports were not generated for the geotechnical program because the tests were qualitative in nature and/or had no specific criteria to be evaluated against. Geotechnical test reports were reviewed using best professional judgment to verify the following: 1) reported test conditions and procedures match requested test conditions and procedures; and 2) test sample depths match requested test sample depths.

Although field quality control samples (e.g., rinsate blanks and field duplicates) were validated and the results of the validations are included in the validation reports, data validation results for these samples are not discussed in this section. The discussion is limited to the validation of normal environmental field samples. Environmental field samples were qualified using field quality control samples and those results are included below.

2.1.1 Data Qualifiers

The following are definitions of the data qualifiers used in the TS PDI:

- U: Indicates the compound was analyzed, but not detected above the detection limit
- J: Indicates an estimated value
- R: Indicates the data were rejected and not usable per quality control (QC) data
- UJ: Indicates the compound was analyzed for, but not detected above, the estimated detection limit

2.2 DATA QUALITY PARAMETERS

The quality of the laboratory data is assessed by precision, accuracy, representativeness, comparability, sensitivity, and completeness. Applicable quantitative goals for these data quality parameters are listed in TS PDI QAPP Worksheet Nos. 12, 15, 19, 30, 24, and 28 (Anchor QEA 2019b). These parameters, as well as other parameters reviewed during data validation, are discussed in the following paragraphs. A detailed narrative describing specific verifications/validation assessments and findings for each laboratory report (see Attachment E) can be found within the DVR (if applicable) prepared for each laboratory data package (see Attachment F). Table 2a summarizes the database task code for samples collected during the TS PDI as part of the larger FS.

2.2.1 Documentation, Sample Preservation, and Holding Times

Chain-of-custody (COC) forms were used to track sample custody and document the handling and integrity of the samples. Samples either were picked up by the laboratories and relinquished under signature by Anchor QEA staff or were shipped to the laboratories. Documented sample custody was maintained throughout collection and analyses. The recommended shipping temperature range for water and most sediment samples is 0°C to 6°C. All sample containers were delivered to the analytical laboratories intact and within the required temperature range, as appropriate to the matrix and analysis. Sediment samples for geotechnical analyses were stored and shipped at ambient temperatures.

Samples were logged in at the laboratories and then placed in refrigerated or frozen storage, or storage at ambient temperatures, per the requirements in TS PDI QAPP Worksheet Nos. 19 and 30 (Anchor QEA 2019b). Sample aliquots collected for archiving were placed in the on-site freezer (kept at less than -10°C and with the temperature monitored continuously) in Anchor QEA's custody. Completed COC forms are included in Attachment C and are also included in the laboratory data reports (see Attachment E).

Samples were appropriately preserved, prepared and analyzed within method required holding times, with some exceptions. Some samples were prepared or analyzed slightly past holding times for some organic or inorganic methods. Results in these instances were qualified as estimated ("J" or "UJ" qualifier). No results were rejected based on excessive hold time exceedances, as described in Section 2.3.

2.2.2 Calibration

Calibration data were provided in the laboratory reports and reviewed per the method and TS PDI QAPP Worksheet No. 24 (Anchor QEA 2019b) as part of the data validation process. Calibration acceptance criteria were met by the laboratories, with a few exceptions for some organic methods (that contain long lists of target analytes). Data qualifiers ("J" or "UJ") were assigned in instances where calibration criteria were not met. No results were rejected based on calibration results outside of criteria.

2.2.3 Precision

Precision is the measure of variability between individual sample measurements of the same property under similar conditions. Precision was measured using the following: field duplicate, laboratory replicate, matrix spike duplicate (MSD), and laboratory control sample duplicate (LCSD) analyses:

- Field duplicate samples were collected by obtaining or homogenizing a larger sample mass to generate an additional, blind-coded sample for laboratory analyses. These samples were analyzed primarily to determine the precision of the homogenization/collection procedures.
- Laboratory replicates are two or more portions of a single field sample that are prepared and analyzed for the same parameter primarily to determine the precision of the analytical method.
- MSD is a duplicate of an aliquot of a field sample spiked with a known concentration of the analyte(s) of interest and is used to determine the precision of the test method for a specific sample and matrix.
- LCSD is a duplicate of a laboratory-generated sample used to determine the precision of the test method.

Precision goals were generally met for most analyses. Field duplicate precision was evaluated to determine if sample collection and processing techniques were adequate. Field duplicate relative percent difference (RPD) values were screened against 50% RPD criteria or a difference of greater than or equal to twice the quantitation limit (QL) if results were less than or equal to five times the QL (TS PDI QAPP Worksheet Nos. 12 and 28; Anchor QEA 2019b). Ninety-seven percent of results were within these criteria as summarized on Table 2b. Based on best professional judgment, sample collection and homogenization procedures were adequate, and outliers are more likely attributed to sporadic sample heterogeneity. For this reason, results were not qualified based on field duplicate precision alone.

Laboratory replicates, matrix spike (MS)/MSD, and laboratory control sample (LCS)/LCSD RPD or difference values are presented in the associated laboratory data reports and/or DVRs in Attachments E and F, respectively. Laboratory precision goals are listed by analysis and matrix in TS PDI QAPP Worksheet Nos. 12 and 28 (Anchor QEA 2019b). Results that were outside of these goals were qualified "J" to indicate results that were estimated due to RPD or difference values outside control limits. No results were rejected based on precision outliers.

2.2.4 Accuracy, Bias, and Sensitivity

2.2.4.1 Accuracy

Accuracy is a measure of the bias in a system and is defined as the agreement between a measurement and an accepted reference or true value. Accuracy was evaluated by the percent recoveries, difference values, or area counts for initial calibration verification samples, continuing calibration verification samples, internal standards, surrogate spikes, MS/MSD, LCS/LCSD, and standard reference material percent recoveries. Performance criteria for each of these measurements are provided in the analytical methods in TS PDI QAPP Worksheet Nos. 12, 24, and 28 (Anchor QEA 2019b). Conformance to laboratory QC sample frequency requirements, as well as acceptability of QC results for accuracy, were evaluated and considered during data verification/validation. Summaries of qualifiers applied to sample results are presented in the associated DVRs.

2.2.4.2 Bias

Bias was evaluated by the recoveries, percent difference values, or area counts of the continuing calibration verification standards, internal standards, surrogate spikes, MS/MSD, and LCS/LCSD. A low recovery indicated a low bias, and an elevated recovery indicated a high bias. Recoveries outside project required criteria were qualified "J" or "UJ" to indicate estimated values. Two benzidine results and one mercury result were rejected due to very low biases in the MS, MSD, or LCS analyses. An additional mercury result was rejected, as described in the DVRs, however, it was for a field duplicate. Section 2.3 describes these occurrences.

2.2.4.3 Sensitivity

Analytical sensitivities were determined by conducting method detection limit (MDL) studies and were tested by the analyses of method blanks and calibration blanks. Detections in blanks elevate the established sensitivity of the analysis for the analyte detected. Most blank results were below detection or were detected at levels between the MDL and the QL; however, a small number of blank results (0.4%) were detected at levels above the QL. Per the TS PDI QAPP (Anchor QEA 2019b), associated detected sample results that were less than five times the levels detected in the blanks were qualified as non-detects at either the QL or the detected concentration, whichever was greater. Target analytes detected in blanks and summaries of subsequent qualifications applied to sample results are presented in the associated DVRs. Some QLs were elevated above those specified in the QAPP due to moisture content, sample analytical aliquot, final extract mass or volume, and/or elevated detections of target and non-target analytes. These occurred in some polycyclic aromatic hydrocarbon (PAH), dioxin/furan (D/F), metals, and polychlorinated biphenyl (PCB) results. QLs listed in the QAPP were achievable by the laboratory based on nominal sample masses in the absence of interferences, so elevated QLs were expected in some instances. The majority of sample results (78%) were detected, and the analytical sensitivities were sufficient to meet project data quality objectives.

An additional bias and sensitivity metric included the analysis of equipment rinsate blanks. A rinsate blank provides information on how sample collection procedures may influence sample results. Volatiles, semivolatiles, PCB congeners, PAHs, and metals were detected in the rinsate blanks at levels between the MDL and QL and above the QL. The detected sample results that were less than five times the levels detected in the porewater equipment blank were qualified as non-detects at either the QL or the detected concentration, whichever was greater. The low concentrations present in the surface and subsurface sediment rinse blanks were very low compared to the samples and determined to have little impact on sample results, so no data were qualified as non-detect based on these rinsate blank results. Summaries of equipment rinsate blank detections are presented in the associated DVRs.

2.2.5 Representativeness

The list of analytes was identified to provide a comprehensive assessment of the known and potential contaminants at the site. The data evaluated are representative of the area or areas sampled and investigated. Field collection procedures adhered to the TS PDI SOPs, and adequate field documentation was provided to record sample collection details in each event. Laboratory bench sheets indicate that sample preparation procedures conformed to laboratory SOPs.

2.2.6 Comparability

The following procedures were used to provide comparability between analytical programs:

- Common traceable calibration standards, spiking standards, and reference materials
  - Standard reference material (SRM) results were within established control limits, with the exceptions of aluminum and antimony in an SRM analyzed in association with four waste characterization samples presented in Alpha Analytical sample delivery group L1954949. Aluminum and antimony are not part of the waste characterization analytical suite, so data quality objectives were not impacted.
- National Environmental Laboratory Accreditation Program certification, where applicable
- Consistency between laboratories and analytical methods used in the RI Phase 1, RI Phase 2, Parts 1 and 2 Feasibility Study field programs, and the TS PDI field program

2.2.7 Completeness

Analytical completeness is a measure of the amount of data determined to be valid in proportion to the amount of data collected. Table 2c provides the analytical completeness of the overall TS PDI field program and the completeness of each analytical category by matrix (as defined in TS PDI QAPP Worksheet No. 12; Anchor QEA 2019b), which is summarized here: overall completeness was calculated by dividing the number of valid, usable data points obtained by the number of requested data points and multiplying by 100. Completeness was greater than 99%. The completeness goal of 90% was met overall and for all analyte groups.

Field completeness is a measure of the number of proposed field samples in proportion to the actual number of field samples collected for each field program. See Table 2d for completeness calculations. The following deviations occurred during sample collection events:

- Two cores per station instead of four were required to provide adequate sample volume to composite material for ISS treatability testing (see Deviation Form 1-3 [Attachment A]).

- Collection of samples using Shelby tubes yielded poor recovery; therefore, bulk material was collected from target intervals via split spoon and composited for testing that did not require undisturbed samples (see Deviation Form 1-5 [Attachment A]).
- Limited native material was recovered at stations EB075SC and EB076SC, which did not allow for compaction testing (see Deviation Form 1-11 [Attachment A]).
- Limited water quality measurements were taken during porewater sampling via temporary well, due to substantial turbidity and poor water level recovery (see Deviation Form 1-12 [Attachment A]).

Overall field completeness was calculated at 100% for all TS PDI field programs, including the stations and samples completed. The overall field completeness goal was 95%.

2.2.8 Significant Figures

Results are stored within the project database as originally reported by the laboratory, retaining the appropriate number of significant figures for that analysis. Data summary tables and data exports used for calculations (e.g., models) retain the laboratory-reported number of significant figures.

Summary statistic tables do not retain the significant figures reported from the laboratory. Percent detected results are rounded to the nearest whole number. Minimum, maximum, and arithmetic average results are rounded to two significant figures, except when only one significant figure is reported by the laboratory. However, when there is a trailing zero to the right of the decimal point, Microsoft Excel automatically removes the zero and reports only one significant figure (e.g., 1.0 milligram per kilogram [mg/kg] becomes 1 mg/kg, or 0.40 mg/kg becomes 0.4 mg/kg).

2.3 DATA QUALITY ISSUES

There were no systematic data quality issues identified in the TS PDI analytical data.

There were some sporadic data quality issues encountered in the TS PDI analytical data (Table 2e). These sporadic data quality issues were encountered in some samples, but do not appear to stem from laboratory procedure or analytical method limitations. Most of these sporadic issues resulted in "J" or "UJ" qualifications to indicate estimated analytical results or estimated detection limits. These issues are detailed in the DVRs prepared for each laboratory data report. When major data quality issues were encountered, data were rejected. A summary of rejected (unusable) data organized by field task is provided in Table 2e. Data quality issues for field duplicates are not included in this summary. The following is a brief description of the major sporadic data quality issues encountered:

- Two toxicity characteristic leaching procedure (TCLP) sediment benzidine results were rejected, due to zero percent recoveries in the associated MS and MSD and/or a very low associated LCS and LCSD recoveries.
- One mercury result in one TCLP sample was rejected, due to a very low associated MS recovery.

2.4 DATA USABILITY AND LIMITATIONS ASSESSMENT

Based on review of the laboratory reports, DVRs, and overall congruity of the data, unqualified, "J," "U," and "UJ" qualified results were considered usable. Rejected data ("R" qualified) will not be used for any purpose. Qualifiers assigned during data validation and their definitions have been incorporated into the final data tables (Attachment B). Reasons for data qualifications are included in the DVRs (Attachment F).

Deviations related to sample analyses are provided in the Table 1 and include:

- Different containers for volatile organic compound analyses were provided by the laboratory than were specified in the TS PDI QAPP (see Deviation Form 1-6 [Attachment A]).
- Analytical holding times were corrected, a laboratory accreditation expiration date was updated, and lead was added to the analyte list for porewater analyses (see Deviation Form 1-8 [Attachment A]).

As described in these deviation forms (Attachment A), data quality was not affected, and all data quality objectives were still met.

3 SEDIMENT

This section summarizes sediment sampling performed as a part of the TS PDI, including waste characterization sampling; surface sediment chemical sampling; and subsurface sediment and native material chemical and geotechnical sampling. Sediment sampling was performed in the TS Area to characterize sediments that will be dredged during TS implementation to establish a waste profile for off-site disposal, as well as to characterize the physical properties and chemical nature of sediments and underlying native material within the TS Area.

A summary of collection methods and procedures for the waste characterization, surface sediment, subsurface sediment and native material, and geotechnical sediment programs are presented in Sections 3.1 through 3.4.

3.1 WASTE CHARACTERIZATION

Waste characterization sediment sampling was conducted in the area to be dredged (on the eastern portion of the TS Area) to establish a waste profile for off-site disposal. Representative sediment samples were collected from 15 locations throughout the planned dredge extent within the TS Area (Figure 3). Discrete and composite waste characterization samples were divided into three groups as described in Section 5.1.3.8 of the TS Work Plan (NRT 2020) and summarized in Table 3a:

1. Group A Waste Characteristics – One discrete sample was collected from the first anticipated 90 dredge tons, one from the second 90 dredge tons, and one from each subsequent 180 dredge tons thereafter, for a total of 20 analytical samples collected from sample locations within the planned dredge extent.
2. Group B Waste Characteristics – One discrete sample was collected for each 750 dredge tons, for a total of four discrete analytical samples collected from sample locations within the planned dredge extent.
3. Group C Waste Characteristics – Four composite samples were collected for each 750 dredge tons. Each composite sample composed of five aliquots collected for each 150 dredge tons, for a total of four analytical samples composited from 20 total aliquots (i.e., five aliquots per composite sample) collected from sample locations within the planned dredge extent.

A summary of the field work, including sample station location information, a summary of collection methods, and sample processing procedures, is provided in Section 3.1.1.

3.1.1 Summary of Field Work

Waste characterization sediment sampling was conducted in November 2019. Sample collection and processing of sediment samples for waste characterization followed the methods outlined in Section 5.1.3.8 of the TS Work Plan (NRT 2020) and described in greater detail in Section 4.2.2.4 of the TS PDI FSAP (Anchor QEA 2019a).

This section describes the procedures used for sample collection, processing, and analysis of the sediment samples collected within the dredge extent of the TS Area.

3.1.1.1 Sample Station Locations

Waste characterization sample locations were occupied following procedures outlined in SOP NC-03 – Navigation and Boat Positioning, included in the TS PDI FSAP (Anchor QEA 2019a). Horizontal positioning was determined using a differential global positioning system (DGPS) unit based on target coordinates described in the TS Work Plan (NRT 2020). Vertical elevation was typically measured at the water level surface using a real-time kinematic (RTK) global positioning system (GPS). Positions collected by GPS were differentially corrected using the nearest available National Oceanic and Atmospheric Administration (NOAA) base station and reported in North American Datum of 1983 (NAD83), New York Long Island (NYLI), State Plane feet. Vertical elevations were reported in North American Vertical Datum of 1988 (NAVD88). Water depth was measured at each location using a leadline prior to sampling and was reported to the nearest tenth of a foot, with the measurement time recorded to correct for tide elevation.

Sampling stations are shown on Figure 3. Sample station locations, sample collection dates, water depth and mudline elevations, sampling equipment used, recovery and sample interval measurements, sample identifications (ID), and the analytes/analyte group designated for each station are summarized in Table 3a.

3.1.1.2 Sample Collection and Processing

Waste characterization samples were collected from 15 stations across three transects. Sediment cores were advanced from a sampling vessel using a vibracore to depths of 5 feet below mudline following procedures outlined in SOP NC-19 – Sediment and Native Material Core Collection, included in the TS PDI FSAP (Anchor QEA 2019a). Sediment physical characteristics, date collected, sample recovery, and number of attempts at each station are presented in Attachment C2. After sediment cores were collected, sample tubes were sealed and secured on the boat, and transferred to the upland field facility for processing.

Discrete subsurface sediment samples were collected from 0 to 45 centimeters (cm; 0 to 1.5 feet) below mudline from all 15 stations, and an additional sample was collected from 75 to 105 cm (2.5 to 3.5 feet) below mudline from five stations with anticipated deeper dredge depths (i.e., the five stations that make up the most eastern of the three transects). Aliquots were collected from discrete sampling locations for composite samples at the frequencies specified in Section 5.1.3.8 of the TS Work Plan (NRT 2020) and summarized in Table 3a. Core processing was performed as described in SOP NC-20 – Sediment and Native Material Core Processing (Anchor QEA 2019a). Photographs of each subsurface waste characterization sample are included in Attachment D2.

Following processing, the samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C2-2, and a summary of associated laboratory data reports is provided in Attachment E. Field activities, measurements, and observations are documented in the Sediment Collection Forms and Daily Logs provided in Attachments C2-1 and C2-3.

The deviation that occurred during waste characterization sediment sampling is listed in Table 1 and was reported to the USEPA as required by Section 1.1 of the TS PDI FSAP (Anchor QEA 2019a). This deviation was:

- Vibracore sampling methods were used to collect sediment samples instead of sonic drilling (see Deviation Form 1-1 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.

3.1.2 Results

Waste characterization sediment samples were analyzed for the following analytes per testing group specified in Section 3.1:

1. Group A Waste Characteristics – total petroleum hydrocarbons (TPH)-diesel range organics (DRO), TPH-gasoline range organics (GRO), and extractable organic halides (EOX).
2. Group B Waste Characteristics – volatile organic compounds (VOCs) and toxicity characteristic leaching procedure TCLP VOCs.
3. Group C Waste Characteristics - PCB Aroclors, semivolatile organic compounds (SVOCs), TCLP SVOCs, TCLP metals, percent solids, total volatile solids, reactive sulfide, reactive cyanide, total cyanide, corrosivity (pH), oil and grease, ignitability, paint filter, TCLP pesticides, and TCLP herbicides.

Waste Characterization sediment sample analytical results are presented in Attachment B2-4, and a statistical summary of the sediment and leachate data are presented in Tables 3b and 3c, respectively. Visual observations, including shake testing results and descriptions of non-aqueous phase liquid (NAPL; if applicable), are summarized on the Sediment Core Logs presented in Attachment B2-5. Sheen was observed at all subsurface sediment sampling stations ranging from a depth of 0 to 185 cm (0 to 6.1 feet) below the mudline. NAPL (i.e., observation of blebs, coated, or saturated sediment) was not identified in any Waste Characterization sediment samples. Positive visual observations (i.e., observations of sheen during core processing and subsequent shake-testing) are presented in Table 3d. Additional data analysis and interpretation is presented in the TS Construction Work Plan.

3.2 SURFACE SEDIMENT ANALYTICAL CHEMISTRY

Surface sediment (defined as the top 0 to 15 cm (0 to 0.5 feet) below the mudline) sampling was conducted at four stations throughout the TS Area to chemically characterize the sediment surface and support TS design and implementation, using methods outlined in Section 5.1.3.3 of the TS Work Plan (NRT 2020) and described in greater detail in Section 4.2.2 of the TS PDI FSAP (Anchor QEA 2019a). Surface sediment samples were collected from four stations outside the planned dredge extent (but still within the TS Area), which were collocated with subsurface sampling stations (Figure 4).

A summary of the field work, including sample station location information, a summary of collection methods, and sample processing procedures, is provided in Section 3.2.1.

3.2.1 Summary of Field Work

Surface sediment sampling was conducted in December 2019. Sample collection and processing of surface sediment samples followed the methods outlined in Section 5.1.3.3 of the TS Work Plan (NRT 2020) and is described in greater detail in Section 4.1 of the TS PDI FSAP (Anchor QEA 2019a).

This section describes the procedures used for sample collection, processing, and analysis of the surface sediment samples collected outside the dredge extent of the TS Area.

3.2.1.1 Sample Station Locations

Surface sediment sampling locations were occupied following procedures outlined in SOP NC-03 – Navigation and Boat Positioning. Horizontal positioning was determined using a DGPS unit based on target coordinates described in the TS Work Plan (NRT 2020). Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Vertical positioning was recorded using a leadline prior to sampling and was reported to the nearest tenth of a foot, with the measurement time recorded to correct for tide elevation.

Surface sediment samples were collected from four stations outside the planned dredge extent and sampling stations are shown in Figure 4. Sample station locations, sample collection dates, water depth and mudline elevations, sampling equipment used, recovery and sample interval measurements, sample IDs, and the analytes/analyte group designated for each station are summarized in Table 4a.

3.2.1.2 Sample Collection and Processing

Surface sediment sampling was performed from a sampling vessel using an Ekman dredge to depths of 15 cm (0.5 feet) below mudline, following procedures outlined in SOP NC-12 – Surface Sediment Sample Collection and Processing (Anchor QEA 2019a). Sediment physical characteristics, date collected, sample recovery, number of attempts at each station, and photographs of each surface sediment sample are presented in Attachments C1 and D1. Surface sediment samples collected for chemical analysis were processed on the sampling vessel immediately after collection.

Following processing, the samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C1-2, and a summary of associated laboratory data reports is provided in Attachment E. Field activities, measurements, and observations are documented in the Sediment Collection Forms and Daily Logs provided in Attachments C1-1 and C1-3.

3.2.2 Results

Surface sediment samples were analyzed for PAHs, PCB congeners, D/F, copper, lead, percent solids, and total organic carbon (TOC). The surface sediment analytical results are presented in Attachment B1-3, and a statistical summary of the data are presented in Table 4b. Additional data analysis and interpretation will be presented in the TS Construction Work Plan.

3.3 SUBSURFACE SEDIMENT AND NATIVE MATERIAL ANALYTICAL CHEMISTRY

Subsurface sediment (from 15 cm [0.5 feet] below the existing mudline [or beginning at the anticipated post-dredge surface at stations located within the planned dredge extent] to the native material interface) sampling was conducted at nine stations throughout the TS Area to chemically characterize the sediment. Subsurface sediment and native material (below the sediment/native material interface) samples were also collected from three of the nine sample stations for ISS testing as discussed in Section 4. Two subsurface sediment samples and one native material sample were composited from the three ISS sampling location within the TS area (Section 4). A discrete sample was collected from each of the three ISS composite samples for chemical characterization, as described in Section 4.1.3. Chemical sampling was conducted to support TS design and implementation, using methods outlined in Section 5.1.3.3 of the TS Work Plan (NRT 2020) and described in greater detail in Section 4.2.2.1 of the TS PDI FSAP (Anchor QEA 2019a). Sampling locations are shown in Figure 5.

A summary of the field work, including sample station location information, a summary of collection methods, and sample processing procedures is provided in Section 3.3.1.

3.3.1 Summary of Field Work

Subsurface sediment and native material sampling was conducted in November 2019. Sample collection and processing of subsurface sediment and native material samples followed the methods outlined in Section 5.1.3.3 of the TS Work Plan (NRT 2020) and is described in greater detail in Section 4.2.2.1 of the TS PDI FSAP (Anchor QEA 2019a).

This section describes the procedures used for sample collection, processing, and analysis of the subsurface sediment and native material samples collected through the TS Area.

3.3.1.1 Sample Station Locations

Subsurface sediment and native material sampling locations were occupied following procedures outlined in SOP NC-03 – Navigation and Boat Positioning (Anchor QEA 2019a). Horizontal positioning was determined using a DGPS unit based on target coordinates described in the TS Work Plan (NRT 2020). Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Vertical positioning was recorded using an RTK GPS unit and reported in NAVD88. Water depth was measured at each location using a leadline prior to sampling and was reported to the nearest tenth of a foot, with the measurement time recorded to correct for tide elevation.

Sampling stations are shown on Figure 5. Sample station locations, sample collection dates, water depth and mudline elevations, sampling equipment used, recovery and sample interval measurements, sample IDs, and the analytes/analyte group designated for each station are summarized in Table 5a.

3.3.1.2 Sample Collection and Processing

Subsurface sediment and native material samples were collected from nine stations within the TS Area, with four of the nine collocated with surface sediment stations as detailed in the TS PDI FSAP (Anchor QEA 2019a). Subsurface sediment and native material sampling was performed from a sampling vessel using vibracore drilling methods. Subsurface sediment and native material sampling was performed following procedures outlined in SOP NC-19 –Sediment and Native Material Core Collection (NRT 2020). After sample cores were collected, sampling tubes were sealed and secured on the boat, and transferred to the upland field facility for processing.

Subsurface sediment and native material cores were processed following procedures described in SOP NC-20 – Sediment and Native Material Core Processing with shake tests performed on samples as described in SOP NC-21 – Sediment-Water Shake Test for the field identification of NAPL (Anchor QEA 2019a). Sediment physical characteristics, date collected, sample recovery, number of attempts at each station, and photographs of each surface sediment sample are presented in Attachments C2 and D2.

Following processing, the samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C2-2, and a summary of associated laboratory data reports is provided in Attachment E. Field activities, measurements, and observations are documented in the Sediment Collection Forms and Daily Logs provided in Attachments C2-1 and C2-3.

The deviations that occurred during subsurface and native material sediment sampling are listed in Table 1 and were reported to the USEPA as required by Section 1.1 of the TS PDI FSAP (Anchor QEA 2019a). These deviations include:

- Vibracore sampling methods were used to collect sediment samples, instead of sonic drilling (see Deviation Form 1-1 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.
- A sampling interval at location EB075SC was accepted at 73% recovery, in order to meet sampling requirements of the FSAP (see Deviation Form 1-7 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.

3.3.2 Results

Subsurface sediment and native material samples were analyzed for PAHs, PCB congeners, D/F, lead, copper, percent solids, and TOC. The subsurface sediment and native material analytical chemistry results are presented in Attachment B2-4, and a statistical summary of the data is presented in Tables 5c and 5d, respectively. Visual observations, including shake testing results and descriptions of NAPL (if applicable), are summarized on Sediment Core Logs and In-Water Boring Logs presented in Attachment B2-5. Sheen was observed at all subsurface sediment sampling stations ranging from a depth of 0 to 449 cm (0 to 14.7 feet) below the mudline. During shake testing, blebs of NAPL were observed in subsurface sediment cores EB077SC and EB078SC at 250 cm (8.2 feet) and 330 cm (10.8 feet) below the mudline, respectively. No other positive indications of NAPL were observed during shake testing. Positive visual observations (i.e., observations of sheen during core processing and subsequent shake testing) are presented in Table 5e. No sheen or NAPL was observed in native material. Additional data analysis and interpretation will be presented in the TS Construction Work Plan.

3.4 GEOTECHNICAL

Sampling of sediment and native material was conducted to further characterize the geotechnical properties of the sediment and native material to support the design and implementation of the TS, as outlined in Section 5.1.3.4 of the TS Work Plan (NRT 2020). To fulfill these objectives, geotechnical samples were collected from six stations throughout the TS Area, which were collocated with surface and subsurface sediment sampling stations (Figure 5).

A summary of the field work, including sample station location information, a summary of collection methods, and sample processing procedures, is provided in Section 3.4.1.

3.4.1 Summary of Field Work

Geotechnical sediment and native material sampling was conducted in November 2019. Sample collection and processing of sediment and native material samples for geotechnical testing followed the methods outlined in Section 5.1.3.4 of the TS Work Plan (NRT 2020) and described in greater detail in Section 4.2.2.2 of the TS PDI FSAP (Anchor QEA 2019a). Cores were advanced at six sample stations, until three undisturbed sediment samples and one undisturbed native material sample could be collected per location. Two core locations, EB072SC and EB075SC, were advanced to 20 feet below the sediment/native material interface for collection of the undisturbed native material samples, to support the bulkhead stability evaluation, as described in Section 5.1.3.1 of the TS Work Plan (NRT 2020).

This section describes the procedures used for sample collection, processing, and analysis of the sediment and native material samples collected within the TS Area.

3.4.1.1 Sample Station Locations

Geotechnical sampling stations were occupied following procedures outlined in SOP NC-03 – Navigation and Boat Positioning, included in the TS PDI FSAP (Anchor QEA 2019a). Horizontal positioning was determined using a DGPS unit based on target coordinates described in the TS Work Plan (NRT 2020). Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Vertical positioning was measured at each location using a leadline prior to sampling and was reported to the nearest tenth of a foot, with the measurement time recorded to correct for tide elevation.

Sampling stations are shown on Figure 5. Sample station locations, sample collection dates, water depth and mudline elevations, sampling equipment used, recovery and sample interval measurements, sample IDs, and the geotechnical testing designated for each sample interval are summarized in Table 5b.

3.4.1.2 Sample Collection and Processing

Geotechnical sediment and native material samples were collected from six stations within the TS Area using sonic and piston coring methods to create a continuous record of material until reaching the sediment/native material interface. Two sampling stations (EB072SC and EB075SC) used sonic drilling methods to collect native material samples up to 20 feet below the sediment/native material interface. Geotechnical sediment and native material samples were collected following procedures outlined in SOP NC-19 – Sediment and Native Material Core Collection and SOP NC-20 – Sediment and Native Material Core Processing (Anchor QEA 2019a).

Four target undisturbed sample intervals were identified at each sampling location, based on the collocated subsurface sediment chemistry cores described in Section 3.3. Three sample intervals were targeted in the sediment, and one interval targeted within the native material at each sampling location. Piston cores or Shelby tubes were used to collect the undisturbed samples to target a range of substrate types (i.e., cohesive and non-cohesive material), as described in Section 4.2.2.2 of the TS PDI FSAP (Anchor QEA 2019a). Sediment and native material physical characteristics, date collected, sample recovery, number of attempts at each station, field testing results, and photographs of each geotechnical sediment sample are presented in Attachments C2 and D2. After sediment cores were collected, sampling tubes were sealed and secured on the boat, and transferred to the upland field facility for processing.

Following processing, the samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping as presented in the TS PDI FSAP (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C2-2, and a summary of associated laboratory data reports is provided in Attachment E. Field activities, measurements, and observations are documented in the Sediment Collection Forms and Daily Logs provided in Attachments C2-1 and C2-3.

The deviations that occurred during geotechnical sediment sampling are listed in Table 1 and were reported to the USEPA as required by Section 1.1 of the TS PDI FSAP (Anchor QEA 2019a). These deviations include:

- Collection of samples using Shelby tubes yielded poor recovery; therefore, bulk material was collected from target intervals via split spoon and composited for testing that does not require undisturbed samples (see Deviation Form 1-5 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.
- Limited native material was recovered at stations EB075SC and EB076SC, which did not allow for compaction testing (see Deviation Form 1-11 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.

3.4.2 Results

Geotechnical samples from subsurface sediment and native material were submitted for laboratory analysis of grain size distribution, Atterberg limits, bulk density, specific gravity, moisture content, organic content, consolidation testing, consolidated undrained (CU) triaxial shear strength testing, and laboratory soil classification. Two sample locations (EB075SC and EB076SC) included additional analyses for compaction testing. Field measurements included standard penetration testing (SPT), vane shear testing, and penetrometer testing. Field testing and laboratory results are presented in Attachments B2-5 and E, respectively, and a statistical summary of the geotechnical data is presented in Table 5c and 5d, respectively. Additional data analysis and interpretation will be presented in the TS Construction Work Plan.

4 ISS LABORATORY TREATABILITY TESTING

As outlined in Section 5.1.3.7 of the TS Work Plan (NRT 2020), ISS laboratory treatability testing was performed on sediment and native material samples collected within the TS Area to further refine ISS design and assess constructability. ISS sampling was conducted at three sampling stations within the planned ISS extent of the TS Area, to chemically characterize subsurface sediment and native material within the ISS area, determine the depth to the native/sediment interface, and collect bulk samples to perform bench-scale ISS mix design testing.

A summary of the field work, including sample station location information, sample collection methods, and sample processing procedures is provided in Section 4.1. A summary of laboratory testing methods and procedures is provided in Section 4.2.

4.1 SUMMARY OF FIELD WORK

ISS sediment and native material sampling was conducted in November 2019. Sample collection and processing of subsurface sediment samples followed the methods outlined in Section 5.1.3.7 of the TS Work Plan (NRT 2020) and described in greater detail in Section 4.2.2.3 of the TS PDI FSAP (Anchor QEA 2019a).

4.1.2 Sample Locations

Subsurface sediment and native material sampling locations were occupied following procedures outlined in SOP NC-03 – Navigation and Boat Positioning (Anchor QEA 2019a). Horizontal positioning was determined using a DGPS unit based on target coordinates described in the TS Work Plan (NRT 2020). Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Vertical positioning was recorded using an RTK GPS unit and reported in NAVD88. Water depth was measured at each location using a leadline prior to sampling and was reported to the nearest tenth of a foot, with the measurement time recorded to correct for tide elevation. Sampling stations are shown in Figure 5. Sample station locations, sample collection dates, water depth and mudline elevations, sampling equipment used, recovery and sample interval measurements, sample IDs, and the analytes/analyte group designated for each station are summarized in Table 5a.

4.1.3 Sample Collection and Processing

ISS sediment and native material sampling was performed from a sampling vessel using a vibracore following procedures outlined in SOP NC-19 –Sediment and Native Material Core Collection (Anchor QEA 2019a). Sediment cores were advanced until a maximum penetration depth of 20 feet below the sediment surface, or until sufficient volume of native material could be collected. After sediment cores were collected, sampling tubes were sealed and secured on the sampling vessel and transferred to the upland field facility for processing.

Subsurface sediment and native material cores were processed following procedures described in SOP NC-20 – Sediment and Native Material Core Processing with shake tests performed on samples as described in SOP NC-21 – Sediment-Water Shake Test for the Field Identification of NAPL (Anchor QEA 2019a). Consistent with methods outlined in Appendix B of the TS Work Plan (NRT 2020), samples were composited into two 5-gallon buckets each from 0 to 150 cm (0 to 5 feet) below the planned post-dredge surface (i.e., -6.5 feet NAVD88), and from 150 cm (5 feet) below the planned post-dredge surface to the native material. One 5-gallon bucket of native material was also composited. Due to a calculation error during field processing, sediment was collected from deeper than the target interval for the shallow composite sample (0 to 150 cm [0 to 5 feet] below the planned post-dredge surface); at station EB077SC-A sediment was collected from 21 to 171 cm (0.7 to 5.7 feet) below the post-dredge elevation, and at station EB078SC-B sediment was collected from 17 to 167 cm (0.5 to 5.5 feet) below the post-dredge elevation. Sediment physical characteristics, date collected, sample recovery, and number of attempts at each station are documented in the Sediment Core Logs and Sediment Core Collection Logs included in Attachments B2-5 and C2-3, respectively. Photographs of each subsurface sediment sample are presented in Attachment D2.

Following processing, the samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C2-2. A summary of associated laboratory data reports is provided in Attachment E. Field activities, measurements, and observations are documented in the Sediment Collection Forms and Daily Logs provided in Attachments C2-1 and C2-3, respectively.

The deviation that occurred during ISS sampling is listed in Table 1 and was reported to the USEPA as required by Section 1.1 of the TS PDI FSAP (Anchor QEA 2019a). This deviation was:

- Two cores per station instead of four provided adequate sample volume to composite material for ISS treatability testing (see Deviation Form 1-3 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.

4.2 SUMMARY OF ISS LABORATORY TREATABILITY STUDY PROCEDURES

ISS sediment samples were evaluated for potential ISS mix designs as described in Appendix B of the TS Work Plan (NRT 2020). Representative composite sediment samples were submitted to KEMRON Environmental Services, Inc. (KEMRON) in Atlanta, GA in November 2019. The ISS treatability testing procedures are on-going and expected to be completed in the summer of 2020. Specifically, the leaching evaluation procedure performed as part of the Phase 3 testing was initiated after Phase 2 mix design testing in March 2020 and has a duration of approximately 90 days. Phase 1 testing was completed in November 2019. The summary below was provided to USEPA in an ISS Testing update memo dated March 25, 2020. A final ISS Testing memo will be submitted upon completion of the leaching evaluation and prior to the submission of the final TS Design deliverable.

4.2.1 Phase 1 – Initial Characterization of Samples

Five, 5-gallon buckets of untreated material were shipped to and received, inspected, and logged by KEMRON in November 2019. Consistent with the TS Work Plan, two 5-gallon buckets of subsurface sediment were collected from 0 to 150 cm (0 to 5 feet) below the planned post-dredge surface; two 5-gallon buckets of subsurface sediment were collected from 150 cm (5 feet) below the planned post-dredge surface to the native material; and one 5-gallon bucket of native material was collected. Buckets from the same subsurface sediment interval were combined and homogenized by KEMRON prior to sampling for initial characterization.

Untreated ISS sediment and native material composite samples were chemically analyzed for PAHs, PCB congeners, D/F, lead, copper, percent solids, TOC, synthetic precipitation leaching procedure (SPLP) PAHs, SPLP PCBs, SPLP lead, and SPLP copper. Composite samples were also tested for geotechnical parameters including Atterberg limits, pH, particle size, bulk density, and moisture content. Analytical chemistry results are presented in Attachment B2-4, and a statistical summary of the data are presented in Tables 5c (subsurface sediment) and 5d (native material). Results from geotechnical testing are included in Attachment B2-7. Additional data analysis and interpretation will be presented in the TS Construction Work Plan.

4.2.2 Phase 2 – Initial Mix Design Testing and Results

Initial mix design testing was performed separately on each sediment type to evaluate the potential impacts of the different starting moisture contents. Native material will be tested after a sediment mix design has been established. As described in Appendix B of the TS Work Plan, reagents and water (at a water to reagent ratio of 1:1 by weight) were used to create each reagent formulation. A water to reagent ratio range of 1:1 to 1.5:1 was allowed for in the TS Work Plan. The low end of the range was used, due to the high starting moisture content of the untreated sediment. The sediment, reagent, and water mixtures were placed in plastic cylinders to cure. A total of 24 mixes (i.e., three samples using varying percentages of four different admixture combinations for both the shallow and deeper sediment) were prepared using combinations of Type I/II Portland cement (PC); ground, granulated blast furnace slag (GGBFS); and bentonite. Pocket penetrometer (PP), unconfined compressive strength (UCS), and hydraulic conductivity (HC) tests were then performed, as described in Appendix B of the TS Work Plan (NRT 2020). The results of the Phase 2 testing are included in Attachment B2-7 and discussed below.

The UCS results from the 24 mixes ranged from 0.6 to 37.6 pounds per square inch (psi) after 28 days of curing. Four mixes that developed UCS values greater than 15 psi (16.0 to 37.6 psi) after 28 days of curing were carried forward to HC testing. Further testing was not conducted on samples that did not achieve UCS greater than 15 psi at 28 days. The 15-psi limit was based on the judgment that these samples would not likely reach the 30-psi preliminary performance goal presented in the TS Work Plan, even with additional curing time. The measured HC values from the four samples tested after 28 days of curing ranged from 1.1×10^{-7} to 2.5×10^{-6} centimeters per second (cm/s), with an arithmetic average of 7.8×10^{-7} cm/s. The performance goal for HC presented in the TS Work Plan was an arithmetic average of less than or equal to 1×10^{-6} cm/s, with no sample greater than 1×10^{-5} cm/s; this goal was met by these four samples.

It is not feasible to use separate mix designs for separate depth intervals of sediment in full-scale ISS, so one mix design that has favorable results for both sediment types will be selected. Mix designs using only 20% PC (i.e., no other reagents were included) yielded a better combination of UCS and HC in both shallow and deeper sediment. The addition of GGBFS improved UCS performance in shallow sediments but resulted in decreased UCS in deeper sediments. The addition of bentonite resulted in lower UCS, when compared to similar mixtures without bentonite. While not included in the TS Work Plan, additional UCS testing was performed on six samples after 56 days of curing to evaluate longer-term strength gain and to determine if performance requirements could be reached with additional curing time. An average increase in UCS of 55% was observed between 28 days and 56 days, indicating that significant curing continued to occur after 28 days. Considering the high moisture content observed in the untreated sediment, the increase in UCS from 28 to 56 days of curing indicated curing may be decelerated by the high moisture content, and that lowering the water used to mix the admixture grout could have beneficial results by reducing the overall water content of the sediment/grout mixture.

4.2.3 Phase 3 – Optimization Testing and Results

With the goal of improving the curing characteristics observed during Phase 2: Initial Mix Design Testing, Phase 3: Optimization Testing was performed, and the mixtures presented in the following table were prepared:

Mix No.	Mix Formulation	Water to Total Reagent Ratio (by weight)	% Addition (by wet weight of untreated material)
1	0-150 cm sediment /Type III PC	0.8:1	20% PC
2	0-150 cm /Type III PC/GGBFS	0.8:1	10% PC/10% GGBFS
3	>150 cm sediment /Type III PC	0.8:1	20% PC
4	>150 cm /Type III PC/GGBFS	0.8:1	10% PC/10% GGBFS

Phase 3 testing was designed, based on the following considerations:

- Because the addition of bentonite resulted in lower UCS in the Phase 2 testing, bentonite was not included in the Phase 3 mixes.
- New mixes using Type III early-setting PC (High-Early) were created to accelerate curing and increase 28-day UCS results. Type III PC was selected due to its accelerated curing characteristics.
- Samples were also prepared using a mixture of Type III PC and GGBFS in case the Type III PC grout or mixed samples cured quicker than expected. GGBFS can inhibit some of the quick curing characteristics of Type III PC, to avoid setting early prior to mixing with the sediment.
- Mixes were prepared using a reduced water to reagent ratio of 0.8:1 by weight to minimize moisture content to allow accelerated UCS gain.
- PP testing was performed after 1, 7, and 14 days of curing.
- UCS testing was conducted after 28 days of curing.
- HC testing was also conducted at 28 days.

The results of the Phase 3 testing are included in Attachment B2-7 and indicate that the use of Type III PC did not improve curing characteristics, even when combined with the lower water to reagent ratio of 0.8:1 by weight. UCS results for the four mixes after 28 days of curing compared to the samples using the same percentage of Type I/II PC are presented in the following table:

Mix No.	Mix Formulation	UCS at 28 days – Type III PC (psi)	Phase 2 UCS 28 days – Type I/II PC (psi)
1	0-150 cm sediment/Type III PC	14.6	20.4
2	0-150 cm sediment/Type III PC/GGBFS	6.7	37.6
3	>150 cm sediment/Type III PC	22.9	22.1
4	>150 cm sediment/Type III PC/GGBFS	2.8	16.0

These results are similar to (though generally lower than) those from the initial testing mixtures using the same amount of Type I/II PC with a water to reagent ratio of 1:1 at 28 days of curing. HC testing was also performed on these samples and the results are provided in Attachment B2-7.

4.3 CONCLUSIONS AND ONGOING TESTING

As the use of Type III PC did not increase UCS, testing of the native material and leaching evaluation using the Leaching Environmental Assessment Framework (LEAF) USEPA Method 1315 will be performed using the most favorable mix designs observed in Phase 2 testing. The selected mix design going forward will be a mixture of 20% Type I/II PC, which yielded UCS values after 56 days of curing of 28.2 and 34.5 psi for the shallow and deeper sediment, respectively. While the use of 10% GGBFS with 10% Type I/II PC resulted in higher UCS values after 56 days of curing for shallow sediment (40.9 psi), it resulted in lower UCS for deeper sediment (19.4 psi), so it will not be tested further.

The selected mix design (20% Type I/II PC) did not achieve the preliminary performance goal at 28 days. With further curing to 56 days, this design did get close to (or exceed) the preliminary performance goal, yielding 28.2 and 34.5 psi for the shallow and deeper sediment, respectively. The 30-psi performance goal listed in the TS Work Plan is a preliminary, conservative value used to evaluate treatability testing and was not proposed as a performance requirement for ISS.

The water content of the Newtown Creek sediment will result in slower curing and, based on bench-scale testing, it is reasonable to assume preliminary performance goals will be achieved in full-scale application. Therefore, NCG proposes to move forward with the selected Phase 2 mix design with the grout water to reagent ratio lowered from 1:1 to 0.8:1. Actual performance will be evaluated during the TS field work per section 5.3.2.2 of the TS Work Plan (NRT 2020).

Per the TS Work Plan, UCS and HC testing will be performed on the native material using the selected mix design. Leaching test results as well as UCS and HC testing on native material will be provided in the final ISS Testing update memo.

5 POREWATER

Porewater sampling was conducted within the TS Area to assess the chemical characteristics of porewater to further refine cap modeling and design, as outlined in Section 5.1.3.6 of the TS Work Plan (NRT 2020). Porewater sampling was conducted at six sampling stations throughout the TS Area using a combination of active, and *in situ* passive sampling methods. Porewater samples were collected from 30 to 60 cm (1 to 2 feet) below the top of mudline outside the planned dredge extent within the TS Area, and from 30 to 60 cm (1 to 2 feet) below the anticipated post-dredge surface elevation within the dredge extent (Figure 6).

A summary of the field work, including sample station location information, a summary of collection methods, and sample processing procedures, is provided in Section 5.1.

5.1 SUMMARY OF FIELD WORK

Porewater sampling was conducted in two separate mobilizations, in November and December 2019. Collection and processing of porewater samples followed the methods outlined in Section 5.1.3.6 of the TS Work Plan (NRT 2020) and described in greater detail in Section 6.2.2 of the TS PDI FSAP (Anchor QEA 2019a). Passive porewater sampling was conducted using collocated sampling devices. Two solid-phase microextraction (SPME), polydimethyl siloxane-coated glass fiber rods were installed at each station (i.e., one for PAH analysis and one for PCB analysis). Dissolved metals were passively sampled using dialysis membrane cell (peeper) samplers at the four stations outside the planned dredge extent, and actively sampled using collocated temporary wells at the two stations within the planned dredge extent.

This section describes the sample station locations, and procedures used for sample collection, processing, and analysis of the porewater samples collected within the TS Area.

5.1.1 Sample Station Locations

Porewater sampling locations were occupied following procedures outlined in SOP NC-03 – Navigation and Boat Positioning (Anchor QEA 2019a). Horizontal positioning was determined using a DGPS unit based on target coordinates described in the TS Work Plan (NRT 2020). Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Water depth was measured using the vessel echo-sounder upon arrival at the station.

Sampling stations are shown in Figure 6. Sample station locations, sample collection dates, water depth and mudline elevations, sampling equipment used, sample IDs, and the chemical analyses designated for each sample are summarized in Table 6a.

5.1.2 Sample Collection and Processing

Porewater sampling was conducted using a combination of passive (SPME and peepers) and active (temporary well) sampling methods. At stations located outside the proposed dredge extent (i.e., EB071PW through EB074PW; Figure 6) samples were collected using passive sampling devices only; one SPME and one peeper device were installed. At stations located within the planned dredge extent (i.e., EB075PW and EB076PW; Figure 6) samples were collected using SPME devices and temporary wells; one SPME device and one temporary well were installed at the anticipated post-dredge surface elevation. Temporary wells were utilized at stations EB075PW and E076PW instead of peepers, because the peepers could not be installed at the post-dredge surface elevation.

Passive samplers were deployed with the assistance of commercial divers, and temporary wells were installed manually by hand from a boat. Passive sampling is described below in Section 5.1.2.1 and active sampling using temporary porewater wells is described in Section 5.1.2.2.

5.1.2.1 Passive Samplers

SPME and peeper samplers were used for *in situ* passive porewater sample collection within the TS Area in December 2019. One SPME sampling device was installed by divers at each of the six stations following procedures described in SOP NC-32 – Sediment Porewater Sampling with Solid-Phase Microextraction, included in the TS PDI FSAP (Anchor QEA 2019a). SPME sampling devices were deployed from 30 to 60 cm (1 to 2 feet) below the top of mudline outside the planned dredge extent within the TS Area (i.e., stations EB071PW through EB074PW; Figure 6), and from 30 to 60 cm (1 to 2 feet) below the anticipated post-dredge surface elevation within the planned extent of the dredge area (i.e., stations EB075PW and EB076PW; Figure 6).

One peeper sampling device was installed by divers from 30 to 60 cm (1 to 2 feet) below the mudline at four stations outside the planned dredge extent in the TS Area (i.e., sample stations EB071PW – EB074PW; Figure 6) following protocols described in SOP NC-33 – Sediment Porewater Sampling with Dialysis Membrane Cells [Peepers] and Temporary Wells (Anchor QEA 2019a). Passive porewater samplers were deployed on November 19, 2019. Sample collection occurred over a 1-month period, and divers retrieved the samples on December 19, 2019. After passive porewater samplers were retrieved by divers, observations of condition of each device (e.g., breakage, presence of biofouling, or color changes on the surface of the sampler) were noted on retrieval forms. Peeper Deployment and Retrieval forms are included in Attachment C5-3 and C5-4.

SPME processing occurred on the boat immediately after retrieval, and peepers were sealed and secured on the boat. Then, both were transferred to the upland field facility for processing. SPME sampling rods retrieved from outside the planned dredge extent (i.e., stations EB071PW through EB074PW), were segmented into two intervals, approximately 30 to 45 cm [1.0 to 1.5 feet] and 45 to 60 cm (1.5 to 2.0 feet) below mudline. For locations inside the planned dredge extent (i.e., sample stations EB075PW and EB076PW), SPME sampling rods were installed from 64 to 94 cm (2.1 to 3.1 feet) below the existing mudline at EB075PW, and from 121 to 151 cm (4.0 to 5.0 feet) below the existing mudline at EB076PW (Figure 6). SPME sampling rods retrieved from within the planned dredge extent were segmented into two 15-cm intervals (corresponding to 1.0 to 1.5 feet and 1.5 to 2.0 feet below the planned post-dredge surface) and sealed in individual containers for chemical analysis.

During peeper processing, porewater was removed from the recovered peeper sampling chambers using dedicated syringes, taking care to segregate porewater from the 0- to 15-cm (0 to 0.5 feet) interval from the 15- to 30-cm (0.5 to 1 foot) interval of the sampling device for chemical analysis (i.e., 1.0 to 1.5 feet below the top of mudline and 1.5 to 2.0 feet below the stop of mudline, respectively). While collecting samples from the peepers, porewater field parameters including pH, temperature, and conductivity were measured from additional sample volume and recorded on the Peeper Retrieval Form. SPME Deployment and Retrieval forms are included in Attachment C5-3 and C5-4.

Following processing, the samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C5-2, and a summary of associated laboratory data reports is provided in Attachment E. Field activities, measurements, and observations are documented in the Daily Logs, and SPME and Peeper Deployment and Retrieval Forms provided in Attachment C5-1 and Attachments C5-3 through C5-4.

5.1.2.2 Temporary Wells

Active porewater sampling was conducted at two stations within the planned dredge extent (i.e., locations EB075PW and EB076PW; Figure 6) in November 2019. Temporary wells were installed using direct-push methods, and sampled following protocols described in SOP NC-33 – Sediment Porewater Sampling with Dialysis Membrane Cells [Peepers] and Temporary Wells (Anchor QEA 2019a). Polyvinyl chloride (PVC), pre-packed well screens with 0.010-inch slots were installed from the 30- to 60-cm (1 to 2 feet) interval below the planned dredge depth of -6.5 feet NAVD88. Samples were collected from both stations for dissolved lead and copper analyses only.

Following processing, the samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C5-2, and a summary of associated laboratory data reports is provided in Attachment E. Field activities, measurements, and observations are documented in the Temporary Porewater Sampling Log Forms and Well Installation Logs provided in Attachments C5-5 and C5-6, respectively.

The deviation that occurred during porewater sampling is listed in Table 1 and was reported to the USEPA as required by Section 1.1 of the TS PDI FSAP (Anchor QEA 2019a). This deviation was:

- Limited water quality measurements were taken during porewater sampling via temporary wells, due to substantial turbidity and poor water level recovery (see Deviation Form 1-12 [Attachment A]). As described in Attachment A, data quality was not affected as a result of this deviation, and all data quality objectives were met.

5.2 RESULTS

Porewater samples were analyzed for PAHs, PCB congeners, dissolved lead, and dissolved copper. In addition, water quality parameters were collected at each sampling location (temperature, pH, salinity, dissolved oxygen (DO), conductivity, and turbidity) during sampling. The porewater analytical results are presented in Attachment B6-2, and a statistical summary of the data is presented in Table 6b. The water quality parameters are presented in the Temporary Well Porewater Sampling Forms provided in Attachment C5-5. Additional data analysis and interpretation will be presented in the TS Construction Work Plan.

6 HYDROLOGY

This section summarizes hydrological data collection performed as a part of the TS PDI, including vertical hydraulic gradient (VHG) measurements, gravity drainage hydraulic measurements, and groundwater and surface water level data collection. Goals of the hydrologic sampling program were to further refine the understanding of groundwater seepage within the TS Area. Data will be used to inform cap modeling and design, as well as provide baseline information for the ISS evaluation as described in Section 5.1.3.5 of the TS Work Plan (NRT 2020).

A summary of the field work, including sample station location information, a summary of collection methods, and sample processing procedures, is provided in Sections 6.1 through 6.4.

6.1 VERTICAL HYDRAULIC GRADIENT MEASUREMENTS

Vertical hydraulic conductivity was measured at six stations within the TS Area to refine the understanding of groundwater seepage and further support cap modeling and design, as outlined in Section 5.1.3.5 of the TS Work Plan (NRT 2020).

A summary of the field work, including station location information and a summary of collection methods, is provided in Section 6.1.2.

6.1.1 Summary of Field Work

VHG rod installation was conducted in December 2019. VHG rods consisted of a single PVC rod, equipped with two pressure transducers: one to measure the pressure head approximately 150 cm (5 feet) below the mudline and one to measure this at the mudline, using methods outlined in Section 5.1.3.5 of the TS Work Plan (NRT 2020) and described in greater detail in Section 6.1.2.1 of the TS PDI FSAP (Anchor QEA 2019a). Transducers included additional sensors to measure temperature and conductivity at the mudline and approximately 150 cm (5 feet) below the mudline at each station. VHG rods were installed at all sample locations inside and outside the planned dredge extent. VHG rods were deployed on December 13, 2019 and retrieved on December 18, 2019.

6.1.1.1 Sample Station Locations

The VHG measurement locations were occupied following procedures outlined in SOP NC-03 – Navigation and Boat Positioning (Anchor QEA 2019a). Horizontal positioning was determined using a DGPS unit based on target coordinates described in the TS Work Plan (NRT 2020). Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Sampling stations are shown in Figure 7. Sample station locations, VHG rod deployment and retrieval dates, and VHG rod transducer interval depths are summarized in Table 7.

6.1.1.2 Data Collection and Processing

The VHG rods were installed at each station with the assistance of commercial divers following procedures outlined in SOP NC-34 – Vertical Hydraulic Gradient Measurement (Anchor QEA 2019a). Prior to deployment, each VHG rod was placed in a submerged calibration pipe to collect data for at least 10 minutes. The calibration pipe was used to collect zero-gradient pressure differences between the two transducers on the calibration rod. Following the calibration period, the VHG rod was removed from the calibration pipe by the diver and manually advanced into the sediment until the upper transducer coupling was submerged just below the mudline.

Transducers were deployed for a period of at least four tidal cycles, as detailed in Section 6.1.2.1 of the TS PDI FSAP (Anchor QEA 2019a). After the deployment period was over, VHG rods were retrieved by divers. Upon retrieval, the transducers were again placed into a submerged calibration pipe for at least 10 minutes. The average pre-deployment and post-deployment zero-gradient pressure differences were subtracted from the VHG pressure head difference data collected during deployment to calculate the head differences associated with hydraulic gradient in the sediment. After VHG rods were retrieved, data collected from the transducers were downloaded for post-processing.

Daily Logs from VHG installation activities are provided in Attachment C3-1, and photographs of deployment and retrieval efforts are included in Attachment D5.

6.1.2 Results

Transducer data including pressure, temperature, and conductivity measurements are presented in Attachment B3-1. A table summarizing the VHG data and figures summarizing VHG measurements at each station are included in Attachment B3-2. The table presents calculated VHG averages at each station during early and late periods of deployment. Each deployment average includes three complete tidal cycles. Summary figures depicting VHG and surface water pressure head measurements at each station over the deployment period are presented in Attachment B3-2.

Differences in temperature at the top and bottom transducer depths (i.e., at the mudline and approximately 150 cm (5 feet) below the mudline) remained consistent throughout the sampling period. Conductivity generally decreased at both the top and bottom transducer depths at each station during the deployment period (Attachment B3-1). No precipitation was observed during deployment and retrieval of the VHG rods; however, 3.2 inches of precipitation was recorded at LaGuardia Airport over the 6-day measurement period (NOAA 2020). Additional data analysis and interpretation will be presented in the draft TS Construction Work Plan.

6.2 GRAVITY DRAINAGE TESTING

Sediment cores were collected for gravity drainage testing at six stations, collocated with the VHG sampling stations as described in Section 6.1. Gravity drainage testing was used to empirically estimate vertical hydraulic conductivity to support cap modeling and design, as outlined in Section 5.1.3.5 of the TS Work Plan (NRT 2020).

A summary of the field work, including sample station location information, a summary of collection methods, and gravity drainage testing procedures, is provided in Section 6.2.1.

6.2.1 Summary of Field Work

Gravity drainage measurements were conducted in November 2019. Sediment cores were collected for testing at each sample station from 0 to 150 cm (0 to 5 feet) below the mudline, using methods described in Section 4.2.2.5 of the TS PDI FSAP (Anchor QEA 2019a). Gravity drainage sediment cores were collected below the existing mudline for all sample locations inside and outside the planned dredge extent.

6.2.1.1 Sample Station Locations and Sediment Core Collection

Gravity drainage sediment core stations were occupied following procedures outlined in SOP NC-03 – Navigation and Boat Positioning (Anchor QEA 2019a). Horizontal positioning was determined using a DGPS unit based on target coordinates described in the TS Work Plan (NRT 2020). Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Water depth was measured at each location using a leadline prior to sampling and was reported to the nearest tenth of a foot, with the measurement time recorded to correct for tide elevation. Core stations are shown on Figure 7.

Gravity drainage sediment cores were advanced from a sampling vessel using a vibracore to depths of 150 cm (5 feet) below mudline following procedures outlined in SOP NC-50 – Vertical Hydraulic Conductivity Data Collection. After sediment cores were collected, sampling tubes were sealed and secured on the boat, and transferred to the upland field facility for gravity drainage testing.

Sample station locations, sample collection dates, water depth and mudline elevations, sampling equipment used, and sample IDs used for hydraulic conductivity testing are summarized in Table 5b.

6.2.1.2 Gravity Drainage Testing and Vertical Hydraulic Data Collection

Gravity drainage testing was conducted on each collected sediment core following procedures described in SOP NC-50 – Vertical Hydraulic Conductivity Data Collection (Anchor QEA 2019a). Gravity drainage testing data are presented in the Vertical Hydraulic Conductivity Field Test Data Sheets, provided in Attachment C2-5.

After gravity drainage testing was completed, each sediment core was segmented into two intervals, approximately 46 to 61 cm (1.5 to 2.0 feet) and 107 to 122 cm (3.5 to 4 feet) below the mudline, and sealed for laboratory analysis of hydraulic conductivity. Samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C2-2, and a summary of associated laboratory data reports are provided in Attachment E. Field activities, measurements, and observations are documented in the Sediment Collection Forms and Daily Logs provided in Attachments C2-1 and C2-3.

The deviation that occurred during gravity drainage testing is listed in Table 1 and was reported to the USEPA as required by Section 1.1 of the TS PDI FSAP (Anchor QEA 2019a). This deviation was:

- Gravity drainage testing time produced less water than anticipated and testing timeframe was extended to provide additional data (see Deviation Form 1-4 [Attachment A]). As a result of the deviation, more data was collected than detailed in the TS PDI FSAP. Additional data was used to support evaluation of vertical hydraulic conductivity from the gravity drainage testing, and all data quality objectives were met.

6.2.2 Results

Vertical hydraulic conductivity (Kv) calculations from gravity drainage testing are presented in Attachments B2-6. The calculations include the equation of Darcy's law, the magnitudes of the three input parameters, and the results. No site-specific assumptions were used, nor needed, in applying the gravity drainage method to estimate vertical hydraulic conductivity. Under gravity drainage the flow rate becomes constant, so the data trend of cumulative flow volume versus time becomes linear. Only the data that fit the selected linear trend are used in the calculation. In some cases, two linear fits are plausible, so two Kv results are calculated to bracket the Kv value. In these cases, two calculation sheets are provided (presenting the comparative analyses for each linear fit) and both results are within a factor of 2 to 5, which is considered a reasonable degree of replication for hydraulic conductivity measurements. Additional data analysis and interpretation will be presented in the TS Construction Work Plan.

6.3 SURFACE WATER LEVEL MONITORING

Surface water level monitoring was conducted within the TS Area to obtain surface water elevation data to support TS design, as outlined in Section 5.1.3.5 of the TS Work Plan (NRT 2020). A summary of the field work is provided in Section 6.3.1.

6.3.1 Summary of Field Work

Surface water level monitoring was performed in accordance with procedures outlined in Section 6.1.2.2 of the TS PDI FSAP (Anchor QEA 2019a). A tide gauge was installed in November 2019 to record water surface elevations at regular intervals within the TS Area. The tide gauge was installed and maintained in accordance with SOP NC 31 – Groundwater and Surface Water Level Data Collation (Anchor QEA 2019a). Location of the tide gauge is depicted on Figure 7. Following installation, elevation was measured at the location of the tide gauge in accordance with SOP NC-03 – Navigation and Boat Positioning (Anchor QEA 2019a). Vertical positioning was recorded using an RTK GPS unit and reported in NAVD88. The elevation measurement was used in converting water levels to surface water elevation. The tide gauge was configured to record data every 15 minutes, 24 hours a day.

6.3.2 Results

Surface water elevation data are presented in Attachment B4-5. Additional data analysis and interpretation will be presented in the TS Construction Work Plan.

6.4 UPLAND PIEZOMETERS

Upland piezometers were installed to the south of the TS Area to measure upland groundwater levels and for slug testing. Data was collected from piezometers adjacent to the TS Area to support evaluation of ISS implementation as described in Section 5.1.3.5 of the TS Work Plan (NRT 2020).

The deviations that occurred during groundwater monitoring and slug testing are listed in Table 1 and were reported to the USEPA as required by Section 1.1 of the TS PDI FSAP (Anchor QEA 2019a). These deviations include:

- Due to use of sonic drilling methods for piezometer installation, pre-packed monitoring wells were not installed as described in the TS PDI FSAP (see Deviation Form 1-9 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.
- Piezometers showed accelerated recovery during slug testing, so data logging frequencies were increased to provide additional data resolution (see Deviation Form 1-10 [Attachment A]). As a result of this deviation, more data was collected than detailed in the TS PDI FSAP. This additional data was used to support evaluation of the slug testing, and all data quality objectives were met.

6.4.1 Summary of Field Work and Piezometer Installation

Upland piezometers were installed at three stations to the south of the TS Area using sonic and hollow-stem auger (HSA) drilling methods, as described in Section 6.1.2.2 of the TS PDI FSAP (Anchor QEA 2019a). Two of the three stations were collocated with geotechnical borings, as described in Section 7. The third location was installed solely for the purpose of installing the piezometer. Piezometer locations are shown in Figure 8. Piezometer station locations, installation dates, installation equipment used, and ground surface elevations are summarized in Table 8a.

Piezometers were installed following the procedure outlined in SOP NC-31 Groundwater and Surface Water Level Data Collection (NRT 2020). Horizontal positioning was determined using a DGPS unit based on target coordinates described in the TS Work Plan (NRT 2020). Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Vertical positioning was recorded to establish top of casing elevations at each station using an RTK GPS unit and reported in NAVD88.

Prior to piezometer installation, collocated borings were advanced at each station to collect geotechnical data, including depth of the water table (see Section 7 for additional details). During piezometer installation, ten-foot well screens were installed across the water table at each station, based on observations from the collocated geotechnical borings. Following installation, vented data loggers were installed and maintained at each location in accordance with SOP NC 31 – Groundwater and Surface Water Level Data Collation (Anchor QEA 2019a). The vented data loggers were configured to record data every 15 minutes, 24 hours a day.

Moisture from the shallow water table infiltrated the vented cable at piezometer location EB080MW on December 12, 2019 at approximately 07:15. As a result, the vented cable was rendered inoperable and subsequent data collection was rendered inaccurate. The vented data logger was replaced with a non-vented logger and paired barometric pressure data logger in February 2020, at which time normal data collection resumed. Due to the proximity of piezometer location EB081MW to the northern bulkhead and tidal influence on the water table, the vented data logger at this location was also replaced with a non-vented data logger in February 2020.

6.4.1.1 Slug Testing

Slug testing was performed at each of the upland piezometer locations to evaluate the hydraulic conductivity of upland soil, as outlined in Section 5.1.3.5 of the TS Work Plan (NRT 2020). Slug testing was performed following procedures outlined in SOP NC-31 – Groundwater and Surface Water Level Data Collection.

Slug testing was conducted in November 2019. Slug testing consisted of two falling-head (slug-in) and two rising-head (slug-out) tests at each piezometer, as outlined in Section 6.1.2.2. of the TS PDI FSAP (Anchor QEA 2019a). Pressure transducers were used to collect water level data at 0.25-second time intervals during testing, dependent on how quickly the groundwater levels in piezometers recovered. Transducers were placed in the piezometers prior to testing, and water levels were allowed to stabilize prior to initiation of slug testing.

The falling-head test procedure was performed by quickly lowering the entire slug below the groundwater surface in the well and recording the positive displacement in feet, via the pressure transducer. The rising-head test procedures were performed after the falling-head tests and were performed by quickly removing the entire slug from the well and recording the negative displacement in feet, via the pressure transducer. Both tests were conducted for enough time to allow the groundwater surface to recover to at least 90% of its initial amount of displacement, or for 2 hours, whichever occurred first.

6.4.2 Results

Piezometer installation logs are provided in the Well Construction Details forms in Attachment B4-1. Groundwater elevation measurements are provided in Attachment B4-2, and slug testing data for each piezometer are presented in Attachment B4-3. Slug testing data was analyzed with AQTESOLV Professional Version 4.50 software. A description of the slug test data analysis and the results are included in Attachment B4-4. Documentation of field activities, including piezometer installation and development logs, are included in the Well Detail and Well Development Forms provided in Attachments C4-4 and C4-5, respectively. Additional data analysis and interpretation will be presented in the draft TS Construction Work Plan.

7 UPLAND BORINGS

Upland geotechnical sampling was conducted to further characterize the upland area to support bulkhead evaluation and TS design, as outlined in Section 5.1.3.1 of the TS Work Plan (NRT 2020). To fulfill these objectives, geotechnical borings were advanced at four stations surrounding the TS Area (Figure 8).

A summary of the field work, including sample station location information, a summary of collection methods, and sample processing procedures, is provided in Section 7.1.

7.1 SUMMARY OF FIELD WORK

Upland geotechnical soil borings were advanced at four stations surrounding the TS Area using sonic and HSA drilling techniques, following procedures outlined in SOP NC-49 – Soil Boring Collection and Processing (Anchor QEA 2019a). Sample locations are presented on Figure 8. Sample station locations, sample collection dates, ground surface elevations, sampling equipment used, penetration depths, sample IDs, and the geotechnical testing designated for each sample interval are summarized in Table 8a.

Two target undisturbed sample intervals were identified at each location based on identified stratigraphic units. Shelby tubes were used to collect the undisturbed samples to target a range of soil types (i.e., cohesive and non-cohesive material), as described in Section 4.2.2.2 of the TS PDI FSAP (Anchor QEA 2019a). If a stratigraphic unit was not conducive to collecting undisturbed sample (i.e., urban fill or loosely consolidated material), bulk samples were collected for testing that doesn't require undisturbed samples. Subsurface soil samples collected for geotechnical testing were processed near the boring location, immediately after collection. Subsurface soil physical characteristics, date collected, sample recovery, number of attempts at each station, and photographs of each geotechnical sample interval are presented in Attachments C4 and D3.

Following processing, the samples were packaged for laboratory courier pickup in accordance with SOPs NC-06 – Sample Custody and NC-07 – Sample Packaging and Shipping as presented in the TS PDI FSAP (Anchor QEA 2019a). Completed laboratory COC forms are included in Attachment C4-3, and a summary of associated laboratory data reports are provided in Attachment E. Field activities, measurements, and observations are documented in the Sediment Collection Forms and Daily Logs provided in Attachments C4-1 and C4-2.

The deviations that occurred during upland geotechnical sampling are listed in Table 1 and were reported to the USEPA as required by Section 1.1 of the TS PDI FSAP (Anchor QEA 2019a). These deviations include:

- HSA coring methods were utilized to meet the upland drilling schedule while the sonic coring rig was being utilizing for on-water work (see Deviation Form 1-2 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.
- Collection of samples using Shelby tubes yielded poor recovery; therefore, bulk material was collected from target intervals via split spoon and composited for testing that does not require undisturbed samples (see Deviation Form 1-5 [Attachment A]). Data quality was not affected as a result of this deviation, and all data quality objectives were met.

7.2 RESULTS

Upland geotechnical soil samples were submitted for laboratory testing of grain size distribution, Atterberg limits, moisture content, permeability, CU triaxial shear strength testing, and laboratory soil classification. Field measurements included standard penetration testing (SPT), vane shear testing, and penetrometer testing. Field testing and laboratory results are presented in Attachments B5-3 and E, respectively, and a statistical summary of the geotechnical data is presented in Table 8b.

8 SURVEYS

Terrestrial, bulkhead, and hydrographic surveys were conducted to further inform site conditions within and adjacent to the TS Area. Terrestrial and bulkhead surveys included observations of shorelines and bulkheads to assess the condition and stability of such features. Hydrographic surveys were performed to document the elevation of sediment within the TS Area and identify debris or other impediments that may impact TS implementation. Surveys were conducted as outlined in Sections 5.1.3.1 and 5.1.3.2 of the TS Work Plan (NRT 2020), and further described in Section 7 of the TS PDI FSAP (Anchor QEA 2019a).

8.1 TERRESTRIAL SURVEY

The terrestrial survey was performed consistent with methods outlined in Section 7.2.1 of the TS PDI FSAP (Anchor QEA 2019a). The survey was conducted in the upland area adjacent to the TS Area, and also included a visual survey from the sampling vessel to identify outfalls and pipes discharging to the TS Area.

8.1.1 Summary of Field Work

Terrestrial surveys were conducted in November 2019. Survey locations were recorded following procedures described in SOP NC-03 – Navigation and Boat Positioning and SOP NC-48 – Bulkhead/Shoreline and Terrestrial Surveys (Anchor QEA 2019a). Horizontal positioning during the survey was collected at each pertinent terrestrial feature. Each terrestrial feature was assigned a unique shoreline ID, with observations and photographs recorded on a GPS-enabled tablet.

Terrestrial features recorded during the survey included curb, pavement, and fence line survey points, and well as upland light posts and utility poles. Outfall observations included the location of observed pipes and discharge points, including their condition and observed discharge rates to the TS Area. Pipe condition ratings were used for the outfall survey, including the following:

- Excellent: This rating was assigned to new structures or structures with no visible defects.
- Rusted: This rating was assigned to outfall structures with visible defects related to rusting of steel or metal.

8.1.2 Results

The results of the terrestrial and outfall surveys including observation type, elevation, pipe condition, diameter, discharge rate, and related observations are provided Attachments B7-2 and B7-3. Data collected during the terrestrial and outfall surveys will be used to support TS design.

8.2 BULKHEAD INSPECTION

The bulkhead inspection was performed consistent with methods outlined in Section 7.2.2 of the TS PDI FSAP (Anchor QEA 2019a). The survey was conducted in the upland along the perimeter of the TS Area. The inspection included a visual survey from the sampling vessel to document the visually-observable condition of bulkheads and pilings.

8.2.1 Summary of Field Work

The bulkhead inspection was conducted in November 2019. Survey locations were recorded following procedures described in SOP NC-03 – Navigation and Boat Positioning and SOP NC-48 – Bulkhead/Shoreline and Terrestrial Surveys (Anchor QEA 2019a). Horizontal positioning of bulkhead observations collected during the survey was determined using a DGPS unit. Positions collected by GPS were differentially corrected using the nearest available NOAA base station and reported in NAD83 NYLI State Plane feet. Vertical positioning was recorded using an RTK GPS unit and reported in NAVD88.

8.2.2 Results

Features documented during the bulkhead inspection included structure type, material type, condition, damage type, approximate dimensions of damage, and number of piles (if any). The survey is provided in Attachment B7-1. Data collected during the bulkhead investigation will be used to support TS design.

8.3 HYDROGRAPHIC SURVEYS

Hydrographic surveys were conducted throughout the TS Area including bathymetry, side-scan sonar, and magnetometer debris surveys. Hydrographic surveys were performed consistent with methods outlined in Section 7.2.3 of the TS PDI FSAP (Anchor QEA 2019a).

8.3.1 Summary of Field Work

Hydrographic surveys were conducted in January 2020 by Ocean Surveys Inc. Surveys were performed in the TS Area following procedures described in NC-03 Navigation and Boat Positioning. Specific procedures for bathymetric surveys are described in depth in Section 7.2.3.1 of the TS PDI FSAP, and debris survey procedures are described in Section 7.2.3.2 of the TS PDI FSAP (Anchor QEA 2019a).

8.3.2 Results

Results and observations from the bathymetric, side-scan sonar, and magnetometer surveys are provided in Attachment B-8. Data from the hydrographic surveys will be utilized to further inform the TS design.

REFERENCES

Anchor QEA, 2018. *Feasibility Study Work Plan*. Newtown Creek, Remedial Investigation/Feasibility Study, Brooklyn and Queens, New York. January 2018.

Anchor QEA, 2019a. *Treatability Study Pre-Design Investigation Field Sampling and Analysis Plan*. Remedial Investigation/Feasibility Study, Newtown Creek. October 2019.

Anchor QEA, 2019b. *Treatability Study Pre-Design Investigation Quality Assurance Project Plan*. Remedial Investigation/Feasibility Study, Newtown Creek. November 2019.

Anchor QEA, 2020. *Remedial Investigation Report - Draft*. Remedial Investigation/Feasibility Study, Newtown Creek. June 2020.

Natural Resource Technology (NRT), 2020. *Treatability Study Work Plan - Draft*. Prepared for Newtown Creek Group. March 2020.

National Oceanic and Atmospheric Administration (NOAA), 2020. NOAA Online Weather Data (NOWData), accessed September 2020 at URL **https://w2.weather.gov/climate/xmacis.php?wfo=okx**

U.S. Environmental Protection Agency (USEPA), 2011. United States Environmental Protection Agency Region 2, *Administrative Settlement Agreement and Order on Consent for Remedial Investigation/Feasibility Study*. CERCLA Docket No. CERCLA-02-2011-2011 for the Newtown Creek Superfund Site Kings County and Queens County, New York City, New York. July 2011.

USEPA, 2016. *National Functional Guidelines for High Resolution Superfund Methods Data Review.* Office of Superfund Remediation and Technology Innovation (OSRTI). EPA-542-B-16-001. April 2016.

USEPA, 2017a. *National Functional Guidelines for Organic Superfund Methods Data Review.* OSRTI. EPA-540-R-2017-002. January 2017.

USEPA, 2017b. *National Functional Guidelines for Inorganic Superfund Methods Data Review.* OSRTI. EPA-540-R-2017-001. January 2017.

Tables

Table 1
Deviation Summary

Program	Form Number	Deviation Form and Subject
Treatability Study Pre-Design Investigation	1-1	Modifications for Subsurface Sediment Chemistry Sampling
	1-2	Modifications for Upland Geotechnical Sampling
	1-3	In Situ Solidification Sediment Sample Compositing
	1-4	Gravity Drainage Testing Time
	1-5	Undisturbed and Bulk Geotechnical Sampling
	1-6	Sediment Chemistry Sample Containers
	1-7	Acceptance of Sediment Chemistry Core with Low Recovery—EB075SC-B
	1-8	Quality Assurance Project Plan Updates
	1-9	Upland Monitoring Well Installation Procedure
	1-10	Slug Test Data Recording Intervals
	1-11	Compaction Testing for Native Material Intervals at EB075 and EB076
	1-12	Temporary Well Porewater Sampling at EB076

Table 2a
Sample Directory - Task Code Key

Task Code	Task Description
NCFS_TSPDI	FS Treatability Study PDI

Note:
Task codes are only included for database task codes—additional programs with data that will not be included in the analytical database (EQuIS) are not included

Acronyms:
FS: Feasibility Study
PDI: Pre-Design Investigation

Table 2b
Relative Percent Difference Summary

Analyte	EB003WC-000045				EB071SC-B-075135				EB073SC-B-015075				EB073SC-F-16322			
	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)
Conventional Parameters																
pH (standard unit)	7.7	7.7	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Conventional Parameters (mg/kg)																
Cyanide	3.5	3.7	--	0.2 (≤6.6)	-	-	--	--	-	-	--	--	-	-	--	--
Extractable organic halides (EOX)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Sulfide, reactive	65	12	--	53 (≤20)	-	-	--	--	-	-	--	--	-	-	--	--
Conventional Parameters (wt%)																
Total organic carbon (Rep 1)	-	-	--	--	16.1	16.3	1	--	11.9	11.5	3	--	-	-	--	--
Total organic carbon (Rep 2)	-	-	--	--	15.5	15.8	2	--	11.6	11.5	1	--	-	-	--	--
Total organic carbon (Rep 3)	-	-	--	--	16.4	16	2	--	12	11.2	7	--	-	-	--	--
Total organic carbon (Rep 4)	-	-	--	--	15.5	16.6	7	--	11.6	11.1	4	--	-	-	--	--
Total organic carbon (Average)	-	-	--	--	15.9	16.2	2	--	11.8	11.3	4	--	-	-	--	--
Total solids	28.4	27.6	3	--	33.9	34.9	3	--	33.4	29.4	13	--	-	-	--	--
Total volatile solids	25	26	4	--	-	-	--	--	-	-	--	--	-	-	--	--
Conventional Parameters (lb/ft^3)																
Density (bulk)	-	-	--	--	-	-	--	--	-	-	--	--	119.6	118.1	1.3	--
Density (dry)	-	-	--	--	-	-	--	--	-	-	--	--	107.9	108.3	0.4	--
Grain Size (wt%)																
Gravel	-	-	--	--	-	-	--	--	-	-	--	--	8.4	9.8	15.4	--
Sand	-	-	--	--	-	-	--	--	-	-	--	--	78.9	77.6	1.7	--
Total fines (Reported, not calculated)	-	-	--	--	-	-	--	--	-	-	--	--	12.7	12.6	0.8	--
Percent passing 0.375 inch (3/8 inch sieve)	-	-	--	--	-	-	--	--	-	-	--	--	100	94	6.2	--
Percent passing 110 micron sieve (#140)	-	-	--	--	-	-	--	--	-	-	--	--	14	14	0	--
Percent passing 150 micron sieve (#100)	-	-	--	--	-	-	--	--	-	-	--	--	16	16	0	--
Percent passing 2000 micron sieve (#10)	-	-	--	--	-	-	--	--	-	-	--	--	84	84	0	--
Percent passing 250 micron sieve (#60)	-	-	--	--	-	-	--	--	-	-	--	--	21	21	0	--
Percent passing 425 micron sieve (#40)	-	-	--	--	-	-	--	--	-	-	--	--	30	31	3.3	--
Percent passing 4750 micron sieve (#4)	-	-	--	--	-	-	--	--	-	-	--	--	92	90	2.2	--
Percent passing 75 micron sieve (#200)	-	-	--	--	-	-	--	--	-	-	--	--	13	13	0	--
Percent passing 850 micron sieve (#20)	-	-	--	--	-	-	--	--	-	-	--	--	63	64	1.6	--
Metals (mg/kg)																
Aluminum	7,820	8,030	3	--	-	-	--	--	-	-	--	--	-	-	--	--
Antimony	11.6	11.8	--	0.2 (≤9.3)	-	-	--	--	-	-	--	--	-	-	--	--
Arsenic	29	29.1	0	--	-	-	--	--	-	-	--	--	-	-	--	--
Barium	160	153	4	--	-	-	--	--	-	-	--	--	-	-	--	--
Beryllium	0.447	0.404	--	0.043 (≤1.8)	-	-	--	--	-	-	--	--	-	-	--	--
Cadmium	48.8	46.8	4	--	-	-	--	--	-	-	--	--	-	-	--	--
Calcium	14,300	15,200	6	--	-	-	--	--	-	-	--	--	-	-	--	--
Chromium	845	858	2	--	-	-	--	--	-	-	--	--	-	-	--	--
Cobalt	12.8	13	2	--	-	-	--	--	-	-	--	--	-	-	--	--
Copper	1,350	1,330	1	--	2,730	2,690	1	--	2,220	1,830	19	--	-	-	--	--
Iron	29,800	30,700	3	--	-	-	--	--	-	-	--	--	-	-	--	--
Lead	931	906	3	--	1,730	1,420	20	--	1,060	1,070	1	--	-	-	--	--
Magnesium	8,680	9,100	5	--	-	-	--	--	-	-	--	--	-	-	--	--
Manganese	162	165	2	--	-	-	--	--	-	-	--	--	-	-	--	--
Mercury	4.83	5.78	18	--	-	-	--	--	-	-	--	--	-	-	--	--
Nickel	302	299	1	--	-	-	--	--	-	-	--	--	-	-	--	--
Potassium	1,590	1,660	4	--	-	-	--	--	-	-	--	--	-	-	--	--
Selenium	5.04	4.53	--	0.51 (≤12)	-	-	--	--	-	-	--	--	-	-	--	--
Silver	9.77	10	2	--	-	-	--	--	-	-	--	--	-	-	--	--
Sodium	6,220	6,920	11	--	-	-	--	--	-	-	--	--	-	-	--	--
Thallium	0.308	0.268	--	0.04 (≤1.2)	-	-	--	--	-	-	--	--	-	-	--	--
Vanadium	78.1	87.8	12	--	-	-	--	--	-	-	--	--	-	-	--	--
Zinc	5,550	5,390	3	--	-	-	--	--	-	-	--	--	-	-	--	--
Volatile Organics (µg/kg)																
1,1-Dichloroethane	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,4-Trimethylbenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2-Dichlorobenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2-Dichloroethene, cis-	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,3,5-Trimethylbenzene (Mesitylene)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,3-Dichlorobenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,4-Dichlorobenzene	140	600 U	--	460 (≤1,200)	-	-	--	--	-	-	--	--	-	-	--	--
Acetone	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Carbon disulfide	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Chlorobenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Cyclohexane	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Cymene, p- (4-Isopropyltoluene)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Diisopropylether (Isopropyl Ether)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Ethyl acetate	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Ethylbenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Isopropylbenzene (Cumene)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
m,p-Xylene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Methyl acetate	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Methyl ethyl ketone (2-Butanone)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Methylcyclohexane	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
n-Butylbenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
n-Propylbenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
o-Xylene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
sec-Butylbenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
tert-Butylbenzene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Toluene	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Vinyl chloride	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Semivolatile Organics (µg/kg)																
3-Methylphenol & 4-Methylphenol (m&p-Cresol)	200	860 U	--	660 (≤1,720)	-	-	--	--	-	-	--	--	-	-	--	--
Acetophenone	420	600 U	--	180 (≤1,200)	-	-	--	--	-	-	--	--	-	-	--	--
bis(2-Ethylhexyl)phthalate	460,000	370,000	22	--	-	-	--	--	-	-	--	--	-	-	--	--
Di-n-butylphthalate	410	600 U	--	190 (≤1,200)	-	-	--	--	-	-	--	--	-	-	--	--
Dibenzofuran	970	600 U	--	370 (≤1,200)	-	-	--	--	-	-	--	--	-	-	--	--
Dioxin Furans (ng/kg)																
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	-	-	--	--	19.1	25.1	--	6 (≤79)	12.8	15.6	--	2.8 (18.36)	-	-	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	-	-	--	--	47.6	60.8	--	13 (≤79)	40.2	42.1	--	1.9 (≤91.8)	-	-	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	-	-	--	--	62.9	85.1	--	22 (≤79)	53.8	56.4	--	2.6 (≤91.8)	-	-	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	-	-	--	--	174	196	--	22 (≤79)	144	165	--	21 (≤91.8)	-	-	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	-	-	--	--	120	143	--	23 (≤79)	106	102	--	4 (≤91.8)	-	-	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	-	-	--	--	3,440	3,840	11	--	3,070	3,340	8	--	-	-	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	-	-	--	--	27,000	32,600	19	--	24,900	27,700	11	--	-	-	--	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)	-	-	--	--	422	492	15	--	264	264	0	--	-	-	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)	-	-	--	--	647	774	18	--	395	492	22	--	-	-	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)	-	-	--	--	1,570	1,790	13	--	1,230	1,360	10	--	-	-	--	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)	-	-	--	--	6,570	7,300	11	--	5,860	6,460	10	--	-	-	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	-	-	--	--	129	139	7	--	82.8	92.3	--	9.5 (18.36)	-	-	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	-	-	--	--	226	254	12	--	133	129	--	4 (≤91.8)	-	-	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	-	-	--	--	231	285	21	--	152	170	--	18 (≤91.8)	-	-	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	-	-	--	--	616	714	15	--	371	413	11	--	-	-	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	-	-	--	--	385	416	8	--	213	250	--	37 (≤91.8)	-	-	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	-	-	--	--	224	257	14	--	156	165	--	9 (≤91.8)	-	-	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	-	-	--	--	4,140	4,630	11	--	2,540	2,840	11	--	-	-	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	-	-	--	--	147	175	--	28 (≤79)	91.5	114	--	22 (≤91.8)	-	-	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	-	-	--	--	3810	4250	11	--	2,590	3,060	17	--	-	-	--	--
Total Tetrachlorodibenzofuran (TCDF)	-	-	--	--	2,720	3,090	13	--	1,710	1,740	2	--	-	-	--	--
Total Pentachlorodibenzofuran (PeCDF)	-	-	--	--	3,710	4,160	11	--	2,180	2,300	5	--	-	-	--	--
Total Hexachlorodibenzofuran (HxCDF)	-	-	--	--	4,030	4,630	14	--	2,620	2,850	8	--	-	-	--	--
Total Heptachlorodibenzofuran (HpCDF)	-	-	--	--	6,010	6,830	13	--	3,980	4,420	10	--	-	-	--	--

Analyte	EB074SG-000015				EB083SO-B-642711				EB092SC-A-000045				EB003WC-000045 (TCLP)				EB092SC-A-000045 (TCLP)			
	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)
Conventional Parameters																				
pH (standard unit)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Conventional Parameters (mg/kg)																				
Cyanide	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Extractable organic halides (EOX)	-	-	--	--	-	-	--	--	34.3	86.9	--	53 (≤145)	-	-	--	--	-	-	--	--
Sulfide, reactive	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Conventional Parameters (wt%)																				
Total organic carbon (Rep 1)	13.9	14.1	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total organic carbon (Rep 2)	14	13.5	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total organic carbon (Rep 3)	13.4	13.5	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total organic carbon (Rep 4)	13.6	13.4	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total organic carbon (Average)	13.7	13.6	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total solids	18.4	16.4	11	--	-	-	--	--	27.9	27.9	0	--	-	-	--	--	-	-	--	--
Total volatile solids	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Conventional Parameters (lb/ft^3)																				
Density (bulk)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Density (dry)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Grain Size (wt%)																				
Gravel	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Sand	-	-	--	--	1	0.8	22.2	--	-	-	--	--	-	-	--	--	-	-	--	--
Total fines (Reported, not calculated)	-	-	--	--	99	99.2	0.2	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 0.375 inch (3/8 inch sieve)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 110 micron sieve (#140)	-	-	--	--	99	99	0	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 150 micron sieve (#100)	-	-	--	--	99	99	1	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 2000 micron sieve (#10)	-	-	--	--	100	100	0	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 250 micron sieve (#60)	-	-	--	--	100	100	0	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 425 micron sieve (#40)	-	-	--	--	100	100	0	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 4750 micron sieve (#4)	-	-	--	--	100	100	0	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 75 micron sieve (#200)	-	-	--	--	99	99	0	--	-	-	--	--	-	-	--	--	-	-	--	--
Percent passing 850 micron sieve (#20)	-	-	--	--	100	100	0	--	-	-	--	--	-	-	--	--	-	-	--	--
Metals (mg/kg)																				
Aluminum	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Antimony	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Arsenic	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Barium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Beryllium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Cadmium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Calcium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Chromium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Cobalt	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Copper	951	783	19	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Iron	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Lead	706	570	21	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Magnesium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Manganese	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Mercury	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Nickel	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Potassium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Selenium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Silver	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Sodium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Thallium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Vanadium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Zinc	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Volatile Organics (µg/kg)																				
1,1-Dichloroethane	-	-	--	--	-	-	--	--	1.7	1.8	--	0.1 (≤12.6)	-	-	--	--	-	-	--	--
1,2,4-Trimethylbenzene	-	-	--	--	-	-	--	--	240	310	25	--	-	-	--	--	-	-	--	--
1,2-Dichlorobenzene	-	-	--	--	-	-	--	--	120	170	34	--	-	-	--	--	-	-	--	--
1,2-Dichloroethene, cis-	-	-	--	--	-	-	--	--	3	3.4	--	0.4 (≤12.6)	-	-	--	--	-	-	--	--
1,3,5-Trimethylbenzene (Mesitylene)	-	-	--	--	-	-	--	--	100	130	26	--	-	-	--	--	-	-	--	--
1,3-Dichlorobenzene	-	-	--	--	-	-	--	--	22	32	--	10 (≤26)	-	-	--	--	-	-	--	--
1,4-Dichlorobenzene	-	-	--	--	-	-	--	--	140	200	35	--	-	-	--	--	-	-	--	--
Acetone	-	-	--	--	-	-	--	--	1,600	1,700	6	--	-	-	--	--	-	-	--	--
Benzene	-	-	--	--	-	-	--	--	190	220	15	--	-	-	--	--	-	-	--	--
Carbon disulfide	-	-	--	--	-	-	--	--	180	160	12	--	-	-	--	--	-	-	--	--
Chlorobenzene	-	-	--	--	-	-	--	--	19	23	19	--	-	-	--	--	-	-	--	--
Cyclohexane	-	-	--	--	-	-	--	--	66	91	32	--	-	-	--	--	-	-	--	--
Cymene, p- (4-Isopropyltoluene)	-	-	--	--	-	-	--	--	53	53	0	--	-	-	--	--	-	-	--	--
Diisopropylether (Isopropyl Ether)	-	-	--	--	-	-	--	--	71	80	12	--	-	-	--	--	-	-	--	--
Ethyl acetate	-	-	--	--	-	-	--	--	39 U	390	--	351 (≤78)	-	-	--	--	-	-	--	--
Ethylbenzene	-	-	--	--	-	-	--	--	16	19	17	--	-	-	--	--	-	-	--	--
Isopropylbenzene (Cumene)	-	-	--	--	-	-	--	--	130	160	21	--	-	-	--	--	-	-	--	--
m,p-Xylene	-	-	--	--	-	-	--	--	140	160	13	--	-	-	--	--	-	-	--	--
Methyl acetate	-	-	--	--	-	-	--	--	16 U	19	--	3 (≤32)	-	-	--	--	-	-	--	--
Methyl ethyl ketone (2-Butanone)	-	-	--	--	-	-	--	--	350	63 U	--	287 (≤126)	-	-	--	--	-	-	--	--
Methylcyclohexane	-	-	--	--	-	-	--	--	230	290	23	--	-	-	--	--	-	-	--	--
n-Butylbenzene	-	-	--	--	-	-	--	--	120	160	29	--	-	-	--	--	-	-	--	--
n-Propylbenzene	-	-	--	--	-	-	--	--	140	160	13	--	-	-	--	--	-	-	--	--
o-Xylene	-	-	--	--	-	-	--	--	170	200	16	--	-	-	--	--	-	-	--	--
sec-Butylbenzene	-	-	--	--	-	-	--	--	99	120	19	--	-	-	--	--	-	-	--	--
tert-Butylbenzene	-	-	--	--	-	-	--	--	17	22	--	5 (≤26)	-	-	--	--	-	-	--	--
Toluene	-	-	--	--	-	-	--	--	20	22	10	--	-	-	--	--	-	-	--	--
Vinyl chloride	-	-	--	--	-	-	--	--	9.9	11	--	1.1 (≤12.6)	-	-	--	--	-	-	--	--
Semivolatile Organics (µg/kg)																				
3-Methylphenol & 4-Methylphenol (m&p-Cresol)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Acetophenone	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
bis(2-Ethylhexyl)phthalate	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Di-n-butylphthalate	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Dibenzofuran	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Dioxin Furans (ng/kg)																				
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	24.8	21.5	--	3.3 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	34	33.6	--	0.4 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	90.6	84.1	--	6.5 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	73.7	60.5	--	13.2 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2,140	2,000	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	20,100	18,000	11	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)	102	84.6	19	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)	217	184	--	33 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)	736	706	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)	3,990	3,990	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	34.7	37.2	--	2.5 (≤28.8)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	47.3	45.3	--	2 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	126	128	--	2 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	139	131	--	8 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	101	98.2	--	2.8 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	94	96.1	--	2.1 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1,220	1,120	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	58.1	48.3	--	9.8 (≤143.6)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1,600	1,400	13	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Tetrachlorodibenzofuran (TCDF)	818	868	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Pentachlorodibenzofuran (PeCDF)	1,360	1,440	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Hexachlorodibenzofuran (HxCDF)	1,470	1,440	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Heptachlorodibenzofuran (HpCDF)	2,120	1,950	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--

Table 2b
Relative Percent Difference Summary

	EB003WC-000045				EB071SC-B-075135				EB073SC-B-015075				EB073SC-F-16322				EB074SG-000015				EB083SO-B-642711				EB092SC-A-000045				EB003WC-000045 (TCLP)				EB092SC-A-000045 (TCLP)			
Analyte	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)
PCB Aroclors (µg/kg)																																				
Aroclor-1242	4,680	4,630	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Aroclor-1254	3,660	3,860	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Aroclor-1260	1,950	2,010	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB Congeners (ng/kg)																																				
PCB-1	-	-	--	--	77,800	80,400	3	--	17,000	13,600	22	--	-	-	--	--	5,410	5,730	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-2	-	-	--	--	9,420	9,540	1	--	1,260	809	44	--	-	-	--	--	555	640	--	85 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-3	-	-	--	--	58,800	58,000	1	--	10,700	5,970	57	--	-	-	--	--	4,550	5,030	10	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-4	-	-	--	--	117,000	135,000	14	--	41,900	27,400	42	--	-	-	--	--	16,500	17,200	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-5	-	-	--	--	10,800	11,500	6	--	4,840	4,210	14	--	-	-	--	--	1,340	1,320	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-6	-	-	--	--	131,000	139,000	6	--	27,900	26,800	4	--	-	-	--	--	9,080	8,950	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-7	-	-	--	--	23,800	23,800	0	--	9,690	9,660	0	--	-	-	--	--	2,890	2,750	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-8	-	-	--	--	290,000	299,000	3	--	138,000	126,000	9	--	-	-	--	--	40,000	39,100	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-9	-	-	--	--	25,100	26,500	5	--	10,200	10,700	5	--	-	-	--	--	3,330	3,170	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-10	-	-	--	--	8,840	10,100	13	--	3,360	2,880	15	--	-	-	--	--	1,270	1,360	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-11	-	-	--	--	22,400	23,000	3	--	9,110	6,790	29	--	-	-	--	--	8,060	8,330	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-12/13	-	-	--	--	94,700	99,700	5	--	11,400	9,630	17	--	-	-	--	--	5,410	5,640	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-15	-	-	--	--	165,000	172,000	4	--	85,400	58,700	37	--	-	-	--	--	30,900	32,700	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-16	-	-	--	--	246,000	263,000	7	--	92,800	105,000	12	--	-	-	--	--	37,900	40,800	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-17	-	-	--	--	341,000	367,000	7	--	123,000	125,000	2	--	-	-	--	--	54,200	59,200	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-18/30	-	-	--	--	474,000	522,000	10	--	214,000	218,000	2	--	-	-	--	--	90,000	95,700	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-19	-	-	--	--	47,300	49,400	4	--	23,200	20,700	11	--	-	-	--	--	9,170	9,590	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-20/28	-	-	--	--	689,000	689,000	0	--	323,000	336,000	4	--	-	-	--	--	114,000	115,000	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-21/33	-	-	--	--	277,000	273,000	1	--	169,000	180,000	6	--	-	-	--	--	54,400	53,300	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-22	-	-	--	--	215,000	216,000	0	--	99,900	106,000	6	--	-	-	--	--	34,900	35,400	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-23	-	-	--	--	684	623 U	--	61 (≤94)	310U	365U	--	--	-	-	--	--	110	79U	--	31 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-24	-	-	--	--	8,820	9,290	5	--	3,360	3,160	6	--	-	-	--	--	1,670	1,640	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-25	-	-	--	--	159,000	162,000	2	--	23,000	24,500	6	--	-	-	--	--	8,720	8,610	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-26/29	-	-	--	--	136,000	138,000	1	--	58,100	57,700	1	--	-	-	--	--	19,400	19,400	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-27	-	-	--	--	45,200	48,100	6	--	17,900	18,300	2	--	-	-	--	--	8,390	9,250	10	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-31	-	-	--	--	623,000	621,000	0	--	257,000	287,000	11	--	-	-	--	--	93,200	93,500	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-32	-	-	--	--	170,000	182,000	7	--	75,300	73,900	2	--	-	-	--	--	33,600	36,400	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-34	-	-	--	--	3,790	3,850	2	--	1,120	1,130	1	--	-	-	--	--	354	339	--	15 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-35	-	-	--	--	10,400	11,200	7	--	5,780	5,010	14	--	-	-	--	--	2,090	2,480	17	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-37	-	-	--	--	92,100	92,500	0	--	91,600	92,500	1	--	-	-	--	--	33,900	35,500	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-39	-	-	--	--	3,350	3,600	7	--	1,990	1,800	10	--	-	-	--	--	459	486	--	27 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-40/71	-	-	--	--	254,000	270,000	6	--	107,000	128,000	18	--	-	-	--	--	49,800	54,800	10	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-41	-	-	--	--	64,500	68,500	6	--	28,700	40,400	34	--	-	-	--	--	11,600	12,700	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-42	-	-	--	--	156,000	176,000	12	--	69,800	85,600	20	--	-	-	--	--	33,500	37,100	10	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-43	-	-	--	--	23,400	25,000	7	--	9,300	12,000	25	--	-	-	--	--	3,800	4,520	17	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-44/47/65	-	-	--	--	605,000	618,000	2	--	229,000	280,000	20	--	-	-	--	--	119,000	132,000	10	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-45	-	-	--	--	125,000	126,000	1	--	48,700	55,000	12	--	-	-	--	--	20,900	20,900	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-46	-	-	--	--	43,600	44,400	2	--	16,000	21,900	31	--	-	-	--	--	7,490	7,970	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-48	-	-	--	--	144,000	153,000	6	--	59,700	75,700	24	--	-	-	--	--	26,000	28,900	11	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-49/69	-	-	--	--	382,000	392,000	3	--	153,000	184,000	18	--	-	-	--	--	79,800	90,800	13	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-50/53	-	-	--	--	93,700	97,300	4	--	35,000	47,500	30	--	-	-	--	--	18,800	19,700	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-51	-	-	--	--	22,100	21,100	5	--	9,180	15,800	53	--	-	-	--	--	12,900	14,200	10	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-52	-	-	--	--	753,000	771,000	2	--	277,000	369,000	28	--	-	-	--	--	126,000	146,000	15	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-54	-	-	--	--	1,290	1,500	15	--	993	797	22	--	-	-	--	--	1,650	1,740	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-55	-	-	--	--	24,400	24,300	0	--	4,880	5,300	8	--	-	-	--	--	1,580	1,810	14	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-56	-	-	--	--	174,000	171,000	2	--	89,900	103,000	14	--	-	-	--	--	41,300	44,800	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-57	-	-	--	--	2,630	2,660	1	--	1,120	1,070	5	--	-	-	--	--	409	510	--	101 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-58	-	-	--	--	904	1,370	41	--	427	478	11	--	-	-	--	--	220	209	--	11 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-59/62/75	-	-	--	--	26,500	55,400	71	--	22,300	27,900	22	--	-	-	--	--	11,100	12,100	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-60	-	-	--	--	128,000	126,000	2	--	59,500	68,500	14	--	-	-	--	--	26,400	29,500	11	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-61/70/74/76	-	-	--	--	829,000	807,000	3	--	379,000	423,000	11	--	-	-	--	--	163,000	177,000	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-63	-	-	--	--	22,800	22,700	0	--	9,940	10,700	7	--	-	-	--	--	4,230	4,660	10	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-64	-	-	--	--	268,000	285,000	6	--	113,000	135,000	18	--	-	-	--	--	50,800	56,600	11	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-66	-	-	--	--	274,000	265,000	3	--	180,000	199,000	10	--	-	-	--	--	83,700	90,400	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-67	-	-	--	--	37,200	36,800	1	--	6,920	7,250	5	--	-	-	--	--	3,190	3,440	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-68	-	-	--	--	1,980	2,280	14	--	521	784	40	--	-	-	--	--	408	491	--	83 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-72	-	-	--	--	3,850	3,850	0	--	1,060	1,380	26	--	-	-	--	--	564	628	--	64 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-73	-	-	--	--	162 U	119 U	--	--	739	953	25	--	-	-	--	--	483	560	--	77 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-77	-	-	--	--	34,600	47,600	32	--	22,600	19,400	15	--	-	-	--	--	9,530	9,640	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-79	-	-	--	--	4,940	5,740	15	--	2,950	2,620	12	--	-	-	--	--	696	817	--	121 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-81	-	-	--	--	1,440	1,500	4	--	991	935	6	--	-	-	--	--	162 U	418	--	256 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-82	-	-	--	--	91,300	98,900	8	--	52,400	49,200	6	--	-	-	--	--	17,200	18,000	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-83	-	-	--	--	40,700	27,900	37	--	23,700	24,900	5	--	-	-	--	--	8,580	11,300	27	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-84	-	-	--	--	242,000	264,000	9	--	122,000	125,000	2	--	-	-	--	--	48,800	51,800	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-85/116	-	-	--	--	135,000	147,000	9	--	72,100	55,700	26	--	-	-	--	--	24,100	28,900	18	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-86/87/97/108/119/125	-	-	--	--	550,000	582,000	6	--	292,000	284,000	3	--	-	-	--	--	113,000	119,000	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-89	-	-	--	--	10,200	11,600	13	--	4,950	5,290	7	--	-	-	--	--	1,980	2,110	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-90/101/113	-	-	--	--	864,000	938,000	8	--	437,000	465,000	6	--	-	-	--	--	187,000	198,000	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-91	-	-	--	--	121,000	130,000	7	--	52,800	58,000	9	--	-	-	--	--	28,300	29,600	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-92	-	-	--	--	154,000	170,000	10	--	78,200	84,500	8	--	-	-	--	--	33,000	35,400	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-93/100	-	-	--	--	7,100	7,540	6	--	4,520	5,150	13	--	-	-	--	--	6,140	6,270	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-94	-	-	--	--	4,230	4,830	13	--	2,400	2,350	2	--	-	-	--	--	1,590	1,700	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-95	-	-	--	--	689,000	760,000	10	--	342,000	351,000	3	--	-	-	--	--	147,000	153,000	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-96	-	-	--	--	2,720	6,470	82	--	3,340	2,940	13	--	-	-	--	--	1,550	1,610	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-99	-	-	--	--	303,000	338,000	11	--	161,000	170,000	5	--	-	-	--	--	70,000	71,600	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-102	-	-	--	--	20,100	22,500	11	--	11,800	10,900	8	--	-	-	--	--	5,350	5,620	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-103	-	-	--	--	4,870	5,340	9	--	2,640	2,960	11	--	-	-	--	--	2,680	2,730	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-104	-	-	--	--	83.6 U	92.1 U	--	--	54.9 U	23.1 U	--	--	-	-	--	--	468	639	--	171 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-105	-	-	--	--	231,000	256,000	10	--	148,000	130,000	13	--	-	-	--	--	57,300	60,300	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-107/124	-	-	--	--	24,700	25,800	4	--	15,600	13,700	13	--	-	-	--	--	5,600	5,600	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-109	-	-	--	--	40,000	42,500	6	--	23,000	21,100	9	--	-	-	--	--	8,640	9,080	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-110	-	-	--	--	777,000	825,000	6	--	493,000	423,000	15	--	-	-	--	--	189,000	196,000	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-112	-	-	--	--	1,290	559 U	--	731 (≤94)	226 U	356 U	--	--	-	-	--	--	125 U	166 U	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-114	-	-	--	--	14,800	16,600	11	--	8,950	7,590	16	--	-	-	--	--	3,380	3,430	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-117	-	-	--	--	15,900	16,900	6	--	10,200	16,800	49	--	-	-	--	--	3,570	3,410	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-118	-	-	--	--	525,000	686,000	27	--	324,000	292,000	10	--	-	-	--	--	136,000	139,000	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-120	-	-	--	--	371 U	1,080	--	710 (≤94)	230 U	353 U	--	--	-	-	--	--	108 U	144 U	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-122	-	-	--	--	8,390	9,980	17	--	5,690	5,170	10	--	-	-	--	--	2,200	2,340	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-123	-	-	--	--	8,730	9,010	3	--	6,760	5,670	18	--	-	-	--	--	2,810	2,480	12	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-126	-	-	--	--	1,130	1,490	27	--	2,790	3,410	20	--	-	-	--	--	1,070	1,090	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-128/166	-	-	--	--	126,000	127,000	1	--	63,700	60,400	5	--	-	-	--	--	29,600	29,500	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-129/138/163	-	-	--	--	807,000	971,000	18	--	466,000	385,000	19	--	-	-	--	--	200,000	212,000	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-130	-	-	--	--	50,200	60,500	19	--	29,400	24,600	18	--	-	-	--	--	12,100	13,000	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-131	-	-	--	--	11,900	14,200	18	--	5,960	5,140	15	--	-	-	--	--	2,840	2,630	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-132	-	-	--	--	266,000	316,000	17	--	136,000	120,000	13	--	-	-	--	--	64,700	64,800	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-133	-	-	--	--	9,000	10,200	13	--	4,520	4,330	4	--	-	-	--	--	2,530	2,400	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-134	-	-	--	--	49,300	57,500	15	--	30,800	29,600	4	--	-	-	--	--	14,700	13,900	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-135/151	-	-	--	--	260,000	310,000	18	--	142,000	122,000	15	--	-	-	--	--	68,500	66,300	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-136	-	-	--	--	97,300	140,000	36	--	54,400	47,100	14	--	-	-	--	--	28,000	28,900	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-137	-	-	--	--	37,200	48,100	26	--	20,200	20,700	2	--	-	-	--	--	9,830	9,420	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-139/140	-	-	--	--	12,800	14,800	14	--	6,610	6,010	10	--	-	-	--	--	3,170	3,330	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-141	-	-	--	--	164,000	198,000	19	--	92,300	76,600	19	--	-	-	--	--	41,000	43,300	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-144	-	-	--	--	40,200	48,500	19	--	24,200	19,500	22	--	-	-	--	--	11,300	10,400	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-145	-	-	--	--	207	390	--	40 (≤94)	49.6 U	39 U	--	--	-	-	--	--	23,400	24,400	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-146	-	-	--	--	88,600	107,000	19	--	49,100	43,100	13	--	-	-	--	--	160,000	156,000	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-147/149	-	-	--	--	597,000	708,000	17	--	325,000	260,000	22	--	-	-	--	--	320	328	--	8 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-148	-	-	--	--	532	630	17	--	383	292	27	--	-	-	--	--	642	673	--	31 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-150	-	-	--	--	894	1,210	30	--	594	445	29	--	-	-	--	--	317	305	--	12 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-152	-	-	--	--	423	772	58	--	335	319	5	--	-	-	--	--	160,000	169,000	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--

Table 2b
Relative Percent Difference Summary

Analyte	EB003WC-000045				EB071SC-B-075135				EB073SC-B-015075				EB073SC-F-16322				EB074SG-000015				EB083SO-B-642711				EB092SC-A-000045				EB003WC-000045 (TCLP)				EB092SC-A-000045 (TCLP)			
	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result Normal	Sample Result Duplicate	Relative Percent Difference[1] (%)	Difference[2] (Limits)
PCB-153/168	-	-	--	--	593,000	709,000	18	--	345,000	282,000	20	--	-	-	--	--	3,120	2,890	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-154	-	-	--	--	7,490	8,910	17	--	4,510	3,510	25	--	-	-	--	--	97	85	--	12 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-156/157	-	-	--	--	85,200	90,700	6	--	52,100	42,100	21	--	-	-	--	--	22,400	24,000	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-158	-	-	--	--	83,000	101,000	20	--	48,400	38,900	22	--	-	-	--	--	20,800	21,600	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-162	-	-	--	--	1,860	2,270	20	--	1,260	840	40	--	-	-	--	--	562	545	--	17 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-164	-	-	--	--	46,300	53,700	15	--	29,300	21,300	32	--	-	-	--	--	12,800	13,200	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-167	-	-	--	--	26,900	28,700	6	--	16,800	13,900	19	--	-	-	--	--	7,820	8,050	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-169	-	-	--	--	774 U	689 U	--	--	682	974	35	--	-	-	--	--	611	715	--	104 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-170	-	-	--	--	177,000	201,000	13	--	105,000	101,000	4	--	-	-	--	--	53,400	60,800	13	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-171/173	-	-	--	--	57,200	58,000	1	--	33,700	35,100	4	--	-	-	--	--	18,100	18,600	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-172	-	-	--	--	26,600	31,100	16	--	17,900	17,800	1	--	-	-	--	--	9,720	9,880	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-174	-	-	--	--	192,000	193,000	1	--	107,000	116,000	8	--	-	-	--	--	61,700	60,900	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-175	-	-	--	--	8,730	8,850	1	--	5,310	5,280	1	--	-	-	--	--	2,930	2,920	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-176	-	-	--	--	22,200	26,800	19	--	14,700	12,700	15	--	-	-	--	--	7,880	7,560	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-177	-	-	--	--	99,100	100,000	1	--	59,400	59,800	1	--	-	-	--	--	33,200	33,300	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-178	-	-	--	--	28,600	37,800	28	--	20,600	18,300	12	--	-	-	--	--	11,400	11,300	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-179	-	-	--	--	61,700	78,700	24	--	40,700	34,800	16	--	-	-	--	--	23,300	23,300	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-180/193	-	-	--	--	377,000	415,000	10	--	244,000	223,000	9	--	-	-	--	--	128,000	131,000	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-181	-	-	--	--	1,280	1,490	15	--	894	602	39	--	-	-	--	--	444	200 U	--	244 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-182	-	-	--	--	643	923	36	--	648	320	68	--	-	-	--	--	275	285	--	10 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-183	-	-	--	--	119,000	114,000	4	--	70,200	68,500	2	--	-	-	--	--	42,100	40,500	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-185	-	-	--	--	14,800	23,900	47	--	8,970	11,500	25	--	-	-	--	--	6,060	6,040	0	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-187	-	-	--	--	212,000	212,000	0	--	120,000	126,000	5	--	-	-	--	--	72,600	71,500	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-188	-	-	--	--	99.8 U	142 U	--	--	83.1 U	99.9 U	--	--	-	-	--	--	156	169	--	13 (≤284)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-189	-	-	--	--	5,820	6,490	11	--	4,130	3,050	30	--	-	-	--	--	1,790	2,090	15	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-190	-	-	--	--	32,300	37,200	14	--	18,400	15,600	16	--	-	-	--	--	9,430	10,500	11	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-191	-	-	--	--	7,300	7,670	5	--	4,670	4,010	15	--	-	-	--	--	2,330	2,250	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-194	-	-	--	--	57,700	85,200	38	--	56,300	65,700	15	--	-	-	--	--	28,900	30,700	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-195	-	-	--	--	31,100	31,700	2	--	22,800	28,100	21	--	-	-	--	--	12,200	13,400	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-196	-	-	--	--	49,900	46,600	7	--	27,900	18,900	38	--	-	-	--	--	13,800	14,100	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-197	-	-	--	--	3,430	4,090	18	--	1,720	1,740	1	--	-	-	--	--	988	1,170	17	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-198/199	-	-	--	--	93,800	94,500	1	--	53,800	36,100	39	--	-	-	--	--	26,700	28,100	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-200	-	-	--	--	7,310	12,700	54	--	7,450	5,610	28	--	-	-	--	--	3,930	4,410	12	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-201	-	-	--	--	16,300	15,200	7	--	8,390	6,650	23	--	-	-	--	--	4,640	5,400	15	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-202	-	-	--	--	20,500	17,900	14	--	10,200	7,870	26	--	-	-	--	--	6,060	6,370	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-203	-	-	--	--	55,300	55,600	1	--	31,200	19,100	48	--	-	-	--	--	14,900	15,700	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-205	-	-	--	--	3,980	4,270	7	--	2,770	1,880	38	--	-	-	--	--	1,440	1,760	20	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-206	-	-	--	--	35,700	37,100	4	--	24,500	17,800	32	--	-	-	--	--	12,600	13,300	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-207	-	-	--	--	4,220	5,080	18	--	2,850	2,320	21	--	-	-	--	--	1,450	1,520	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-208	-	-	--	--	8,760	10,300	16	--	7,160	5,580	25	--	-	-	--	--	3,480	3,780	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
PCB-209	-	-	--	--	19,900	20,800	4	--	14,200	12,800	10	--	-	-	--	--	7,010	7,370	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)																																				
1-Methyldibenzothiophene	-	-	--	--	1,220	1,190	2	--	247	400	--	153 (≤189)	-	-	--	--	225	217	--	8 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1-Methylnaphthalene	-	-	--	--	3,190	3,240	2	--	266	277	--	11 (≤189)	-	-	--	--	344	329	--	15 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
1-Methylphenanthrene	-	-	--	--	9,120	9,110	0	--	218	416	--	198 (≤189)	-	-	--	--	837	814	--	23 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	-	-	--	--	5,310	5,980	12	--	60	106	--	47 (≤189)	-	-	--	--	762	715	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2,6-Dimethylnaphthalene	-	-	--	--	8,440	8,630	2	--	606	777	25		-	-	--	--	1,100	623	--	477 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2-Methylanthracene	-	-	--	--	3,680	3,360	9	--	424	768	--	344 (≤189)	-	-	--	--	588	571	--	17 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2-Methyldibenzothiophene & 3-Methyldibenzothiophene	-	-	--	--	4,620	4,580	1	--	72.2	97.4	--	25 (≤189)	-	-	--	--	438	433	--	5 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2-Methylnaphthalene	1,000	550	--	450 (≤1,420)	3,330	3,210	4	--	870	821	6	--	-	-	--	--	900	857	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
2-Methylphenanthrene	-	-	--	--	7,720	7,780	1	--	374	543	--	169 (≤189)	-	-	--	--	419	432	--	13 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
4-Methyldibenzothiophene	-	-	--	--	5,980	5,940	1	--	244	324	--	80 (≤189)	-	-	--	--	796	782	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
4-Methylphenanthrene & 9-Methylphenanthrene	-	-	--	--	10,600	10,500	1	--	815	1,320	47	--	-	-	--	--	1,350	1,340	1	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Acenaphthene	2,200	1,200	--	1,000 (≤960)	3,880	3,780	3	--	303	392	--	89 (≤189)	-	-	--	--	629	589	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Acenaphthylene	910	1,600	--	690 (≤960)	2,460	2,470	0	--	778	1,040	29		-	-	--	--	996	937	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Anthracene	4,000	2,100	62	--	7,250	7,210	1	--	770	1,470	63	--	-	-	--	--	2,050	1,960	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzo(a)anthracene	7,100	4,000	56	--	10,700	11,000	3	--	4,100	5,180	23		-	-	--	--	6,760	6,400	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzo(a)pyrene	5,400	3,300	48	--	9,520	9,520	0	--	4,540	5,500	19		-	-	--	--	8,140	7,440	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzo(b)fluoranthene	7,400	3,700	67	--	7,160	7,300	2	--	3,970	4,990	23		-	-	--	--	8,820	7,130	21	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzo(e)pyrene	-	-	--	--	6,740	6,640	1	--	3,610	4,220	16		-	-	--	--	6,600	6,050	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzo(g,h,i)perylene	3,600	2,100	53	--	5,650	5,630	0	--	3,600	3,660	2		-	-	--	--	6,590	5,950	10	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzo(j,k)fluoranthene	2,400	1,200	--	1,200 (≤720)	7,130	6,760	5	--	4,260	4,500	5	--	-	-	--	--	6,530	6,860	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzonaphthothiophene	-	-	--	--	4,470	4,400	2	--	1,280	2,050	46		-	-	--	--	1,600	1,520	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Benzothiophene	-	-	--	--	169	180	--	11 (≤344)	68	57	--	11 (≤189)	-	-	--	--	91.1	93.4	--	2.3 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Biphenyl (1,1'-Biphenyl)	-	-	--	--	491	486	--	5 (≤344)	152	198	--	46 (≤189)	-	-	--	--	213	183	--	30 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Carbazole	1,400	600 U	--	800 (≤1,200)	260	352	--	92 (≤344)	270	169	--	101 (≤344)	-	-	--	--	536	412	--	124 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Chrysene	6,500	4,000	48	--	12,100	11,900	2	--	3,220	4,040	23		-	-	--	--	8,020	7,190	11	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Decalin, cis- & trans-	-	-	--	--	3,570	3,600	1	--	41.3	43.5	--	2 (≤189)	-	-	--	--	512	491	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Dibenzo(a,h)anthracene and Dibenzo(a,c)anthracene	840	520	--	320 (≤720)	1,680	1,660	1	--	891	1,160	26		-	-	--	--	1,920	1,700	12	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Dibenzothiophene	-	-	--	--	2,750	2,830	3	--	293	409	--	116 (≤189)	-	-	--	--	381	359	--	22 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Fluoranthene	14,000	7,000	67	--	25,000	23,700	5	--	3,320	5,640	52		-	-	--	--	10,700	10,300	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Fluorene	1,600	600 U	--	1,000 (≤1,200)	2,990	2,970	1	--	270	328	19	--	-	-	--	--	382	346	--	36 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Indeno(1,2,3-c,d)pyrene	3,700	1,900	--	1,800 (≤960)	5,030	5,020	0	--	3,260	3,350	3		-	-	--	--	5,860	5,560	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Naphthalene	1,600	470	--	1,130 (≤1,200)	4,310	4,240	2	--	2,130	1,700	22	--	-	-	--	--	2,250	2,140	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Perylene	-	-	--	--	2,210	2,240	1	--	1,330	1,590	18		-	-	--	--	2,440	2,160	12	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Phenanthrene	11,000	4,300	88	--	15,800	15,600	1	--	1,750	2,580	38		-	-	--	--	2,960	2,840	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Pyrene	13,000	7,800	50	--	29,600	28,200	5	--	9,580	15,600	48		-	-	--	--	11,600	10,700	8	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Retene	-	-	--	--	6,640	6,860	3	--	-	-	--	--	-	-	--	--	1,230	1,310	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)																																				
C1-Benzo(b)thiophene	-	-	--	--	793	788	--	11 (≤344)	95.6	129	--	33 (≤189)	-	-	--	--	194	172	--	22 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C1-Dibenzothiophenes	-	-	--	--	12,700	12,500	2	--	598	974	48	--	-	-	--	--	1,620	1,590	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C1-Fluorenes	-	-	--	--	9,440	9,630	2	--	916	1,420	43	--	-	-	--	--	1,030	960	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C1-Decalins	-	-	--	--	12,200	12,100	1	--	237	386	--	149 (≤189)	-	-	--	--	2,660	2,530	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C1-Naphthalenes	-	-	--	--	4,080	4,020	1	--	763	720	6	--	-	-	--	--	816	778	--	38 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C1-Benzanthracenes/Chrysenes	-	-	--	--	11,400	11,200	2	--	4,700	5,720	20	--	-	-	--	--	6,170	5,910	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C1-Fluoranthenes/Pyrenes	-	-	--	--	26,600	26,400	1	--	7,500	12,700	51	--	-	-	--	--	7,730	7,300	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C1-Phenanthrenes/Anthracenes	-	-	--	--	41,200	41,000	0	--	2,300	3,850	50	--	-	-	--	--	4,550	4,430	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C2-Benzo(b)thiophene	-	-	--	--	1,290	1,390	7	--	189	207	--	18 (≤189)	-	-	--	--	298	269	--	29 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C2-Dibenzothiophenes	-	-	--	--	24,800	24,500	1	--	5,120	7,950	43	--	-	-	--	--	3,940	3,820	3	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C2-Fluorenes	-	-	--	--	30,000	29,600	1	--	6,960	11,000	45	--	-	-	--	--	5,480	5,260	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C2-Naphthalenes	-	-	--	--	17,300	18,100	5	--	913	1,020	11	--	-	-	--	--	1,680	1,310	25	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C2-Benzanthracenes/Chrysenes	-	-	--	--	10,300	10,100	2	--	4,170	5,170	21	--	-	-	--	--	5,120	4,840	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C2-Decalins	-	-	--	--	18,100	17,000	6	--	2,190	2,710	21	--	-	-	--	--	6,680	6,360	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C2-Phenanthrenes/Anthracenes	-	-	--	--	61,700	60,800	1	--	3,140	5,990	62	--	-	-	--	--	9,640	9,240	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C3-Benzo(b)thiophene	-	-	--	--	3,230	3,320	3	--	478	641	29	--	-	-	--	--	826	827	--	1 (≤340)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C3-Dibenzothiophenes	-	-	--	--	21,300	20,700	3	--	5,690	9,070	46	--	-	-	--	--	3,890	3,820	2	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C3-Fluorenes	-	-	--	--	33,000	31,500	5	--	8,510	14,700	53	--	-	-	--	--	6,920	6,510	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C3-Naphthalenes	-	-	--	--	40,600	41,100	1	--	806	986	20	--	-	-	--	--	6,270	5,730	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C3-Benzanthracenes/Chrysenes	-	-	--	--	8,500	8,300	2	--	3,310	4,260	25	--	-	-	--	--	4,850	4,440	9	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C3-Decalins	-	-	--	--	15,700	15,300	3	--	3,320	5,160	43	--	-	-	--	--	5,840	5,470	7	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C3-Phenanthrenes/Anthracenes	-	-	--	--	37,700	36,300	4	--	4,100	7,640	60	--	-	-	--	--	7,100	6,680	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C4-Benzo(b)thiophene	-	-	--	--	4,050	3,960	2	--	780	964	21	--	-	-	--	--	910	867	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C4-Dibenzothiophenes	-	-	--	--	10,400	10,100	3	--	2,870	4,960	53	--	-	-	--	--	2,300	2,210	4	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C4-Naphthalenes	-	-	--	--	44,000	43,400	1	--	3,940	5,530	34	--	-	-	--	--	8,560	8,090	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C4-Benzanthracenes/Chrysenes	-	-	--	--	4,810	4,430	8	--	1,810	2,500	32	--	-	-	--	--	3,030	2,870	5	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C4-Decalins	-	-	--	--	28,000	25,800	8	--	6,590	10,700	48	--	-	-	--	--	8,750	7,490	16	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
C4-Phenanthrenes/Anthracenes	-	-	--	--	17,700	16,800	5	--	3,460	6,400	60	--	-	-	--	--	3,570	3,170	12	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Total Petroleum Hydrocarbons (mg/kg)																																				
Oil & grease (HEM)	100,000	94,400	6	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--
Gasoline range hydrocarbons	53	170	--	117 (≤420)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	53	170	--	117 (≤420)	-	-	--	--	-	-	--	--
Diesel range organics (C10 - C28)	940	25,000	--	15,600 (≤6,600)	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	9,400	25,000	--	15,600 (≤6,600)	-	-	--	--	-	-	--	--
TCLP Metals (mg/L)																																				
Barium	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	-	-	--	--	0.29	0.24	--	0.051 (≤0.1)	-	-	--	--
TCLP Volatile Organics (µg/L)																																				

Table 2b
Relative Percent Difference Summary

Analyte	EB003WC-000045				EB071SC-B-075135				EB073SC-B-015075			
	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)
	Normal	Duplicate			Normal	Duplicate			Normal	Duplicate		
Acetone	-	-	--	--	-	-	--	--	-	-	--	--
Carbon disulfide	-	-	--	--	-	-	--	--	-	-	--	--
2-Butanone	-	-	--	--	-	-	--	--	-	-	--	--

Analyte	EB073SC-F-16322				EB074SG-000015				EB083SO-B-642711			
	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)
	Normal	Duplicate			Normal	Duplicate			Normal	Duplicate		
Acetone	-	-	--	--	-	-	--	--	-	-	--	--
Carbon disulfide	-	-	--	--	-	-	--	--	-	-	--	--
2-Butanone	-	-	--	--	-	-	--	--	-	-	--	--

Analyte	EB092SC-A-000045				EB003WC-000045 (TCLP)				EB092SC-A-000045 (TCLP)			
	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)	Sample Result		Relative Percent Difference[1] (%)	Difference[2] (Limits)
	Normal	Duplicate			Normal	Duplicate			Normal	Duplicate		
Acetone	-	-	--	--	-	-	--	--	170	120	--	50 (≤100)
Carbon disulfide	-	-	--	--	-	-	--	--	9.5	6	--	3.5 (≤100)
2-Butanone	-	-	--	--	-	-	--	--	53	43	--	10 (≤100)

Notes:
Sample results are presented to the number of significant figures reported by the laboratory for use in validation and relative percent difference calculations with the exception of trailing zeroes remove
1. Detected parent or field duplicate results were >5x the QL and evaluated by the relative percent difference using the 50% control limit as stated in the Quality Assurance Project Plan
2. Detected parent or field duplicate results were <5x the QL and evaluated by the difference between them using ± 2x's the QL as the control limit

Abbreviations:
-: indicates analysis was not performed
--: indicates no information is applicable or available
µg/kg: micrograms per kilogram
µg/L: micrograms per liter
lb/ft^3: pounds per cubic foot
mg/kg: milligrams per kilogram
mg/L: milligrams per liter
ng/kg: nanograms per kilogram
PCB: polychlorinated biphenyl
QL: quantitation limit
TCLP: toxicity characteristic leaching procedure
U: sample not detected
wt%: weight percent

Table 2c
Analytical Completeness Summary

Matrix Code	Lab Matrix Code	Analytical Group Description	Count Results	Count Rejected Results	Count Non-rejected Results	Percent Completeness
SE	SE	Conventional Parameters (mg/kg)	32	0	32	100
SE	SE	Conventional Parameters (wt%)	96	0	96	100
SE	SE	Metals (mg/kg)	152	0	152	100
SE	SE	Volatile Organics (µg/kg)	324	0	324	100
SE	SE	Semivolatile Organics (µg/kg)	316	0	316	100
SE	SE	Polycyclic Aromatic Hydrocarbons (µg/kg)	1224	0	1224	100
SE	SE	Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)	952	0	952	100
SE	SE	Dioxin Furans (ng/kg)	875	0	875	100
SE	SE	PCB Aroclors (µg/kg)	36	0	36	100
SE	SE	PCB Congeners (ng/kg)	6055	0	6055	100
SE	SE	Total Petroleum Hydrocarbons (mg/kg)	44	0	44	100
SE	WL	Metals (SW1311) (µg/L)	32	1	31	96.88
SE	WL	Metals (SW1312) (µg/L)	6	0	6	100
SE	WL	Volatile Organics (SW1311) (µg/L)	333	0	333	100
SE	WL	Semivolatile Organics (SW1311) (µg/L)	296	2	294	99.32
SE	WL	Polycyclic Aromatic Hydrocarbons (SW1312) (µg/L)	108	0	108	100
SE	WL	Alkylated Polycyclic Aromatic Hydrocarbons (SW1312) (µg/L)	84	0	84	100
SE	WL	Pesticides (SW1311) (µg/L)	88	0	88	100
SE	WL	Herbicides (SW1311) (µg/L)	40	0	40	100
SE	WL	Dioxin Furans (SW1312) (ng/L)	75	0	75	100
SE	WL	PCB Congeners (SW1312) (ng/L)	519	0	519	100
SPME	SPME	Polycyclic Aromatic Hydrocarbons (SPME) (µg/L)	216	0	216	100
SPME	SPME	Alkylated Polycyclic Aromatic Hydrocarbons (SPME) (µg/L)	168	0	168	100
SPME	SPME	PCB Congeners (SPME) (ng/L)	1038	0	1038	100
WX	PEEP	Metals, Dissolved (peeper) (µg/L)	8	0	8	100
WX	WX	Metals, Dissolved (porewater) (µg/L)	4	0	4	100
SE	SE	All Analytes	10106	0	10106	100
SE	WL	All Analytes	1581	3	1578	99.81
SPME	SPME	All Analytes	1422	0	1422	100
WX	PEEP	All Analytes	8	0	8	100
WX	WX	All Analytes	4	0	4	100
--	--	**TS PDI Analytical Completeness Summary**	**13121**	**3**	**13118**	**99.97**

Acronyms:
--: indicates no information is applicable or available
µg/kg: micrograms per kilogram
µg/L: micrograms per liter
mg/kg: milligrams per kilogram
ng/kg: nanograms per kilogram
ng/L: nanograms per liter
PEEP: peepers
SE: sediment
SPME: solid-phase microextraction
WL: leachate
wt%: weight percent
WX: water quality

Table 2d
Field Completeness Summary

Field Program	Proposed Stations Count	Actual Stations Count	Percent Completeness	Proposed Samples Count	Actual Samples Count	Percent Completeness	Percent Field Completeness Goal	Notes
Surface Sediment	4	4	100	4	4	100	95	
Subsurface Sediment/Native Material	24	24	100	74	74	100	95	Collection of Shelby tubes yielded poor recovery in granular sediment and native material types. Piston cores were used for shallow sediment undisturbed tests, and disturbed material was collected for use in appropriate tests.
Upland Geotechnical	4	4	100	8	13	100	95	Collection of Shelby tubes yielded poor recovery in granular soil types. Disturbed material was collected for use in appropriate tests.
Porewater	6	6	100	18	18	100	95	
Vertical Hydraulic Gradient	6	6	100	6	6	100	95	
TS PDI Completeness Summary	**44**	**44**	**100**	**110**	**115**	**100**	**95**	

Note:
Quality control samples, including field duplicates, are not included in counts

Acronym:
TS PDI: Treatability Study Pre-Design Program

Table 2e
Sporadic Data Quality Issues

Matrix	FS Task	Analytical Group	Data Quality Issue	Number of Results Affected	Total Number of Results	Percentage of Results Affected
Leachate	NCFS_TSPDI	SVOCs – benzidine	Very low MS/MSD and/or LCS/LCSD recoveries	2	296	0.7%
Leachate	NCFS_TSPDI	Metals – mercury	Low MS recovery	1	32	3.1%

Note:
Data quality issues on field duplicates are not included

Acronyms:
LCS: laboratory control sample
LCSD: laboratory control sample duplicate
MS: matrix spike
MSD: matrix spike duplicate
SVOC: semivolatile organic compound
TS PDI: Treatability Study Pre-Design Investigation

Table 3a
Waste Characterization Sediment Chemical Sample Collection Summary

Station ID	Core ID	Date Collected	Actual Coordinates[1,2]		Collection Method	Liner Type	Penetration (feet)	Core Recovery (feet)	Core Recovery (%)	Water Depth (feet)[3]	Mudline Elevation (NAVD88)	Sample Interval (feet below mudline)	Sample ID	Waste Characterization Testing Group[4]				
			Easting (X)	Northing (Y)										Group A	Group B	Group C	Group C Composite Sample ID[5]	Archive
EB085SC	EB085SC-A	11/5/2019	1006146.66	200180.72	Vibracore	Lexan	6.0	5.5	91%	7.5	-5.1	0.0 - 1.5	EB085SC-A-000045-20191112	X	--	X	EBCOMP4	X
EB086SC	EB086SC-A	11/12/2019	1006139.16	200154.80			6.0	6.1	102%	3.2	-5.5	0.0 - 1.5	EB086SC-A-000045-20191113	X	--			X
EB087SC	EB087SC-B	11/12/2019	1006135.12	200142.02			6.0	5.9	98%	2.9	-5.2	0.0 - 1.5	EB087SC-B-000045-20191113	X	X			X
EB088SC	EB088SC-A	11/13/2019	1006132.35	200117.30			6.0	6.0	100%	6.9	-4.6	0.0 - 1.5	EB088SC-A-000045-20191113	X	--			X
EB089SC	EB089SC-A	11/8/2019	1006127.96	200097.93			6.0	5.5	91%	3.6	-4.4	0.0 - 1.5	EB089SC-A-000045-20191112	X	--			X
EB090SC	EB090SC-A	11/12/2019	1006207.44	200163.06			6.0	5.3	89%	4.6	-3.6	0.0 - 1.5	EB090SC-A-000045-20191113	X	--	X	EBCOMP3	X
EB091SC	EB091SC-A	11/13/2019	1006202.65	200141.52			6.0	5.5	91%	2.8	-3.8	0.0 - 1.5	EB091SC-A-000045-20191114	X	--			X
EB092SC	EB092SC-A	11/13/2019	1006197.36	200122.80			6.0	5.8	97%	3.1	-3.8	0.0 - 1.5	EB092SC-A-000045-20191114	X	X			X
EB093SC	EB093SC-A	11/13/2019	1006193.19	200105.34			6.0	5.8	97%	3.7	-3.7	0.0 - 1.5	EB093SC-A-000045-20191114	X	--			X
EB094SC	EB094SC-A	11/12/2019	1006186.48	200082.64			6.0	5.8	97%	3.5	-3.5	0.0 - 1.5	EB094SC-A-000045-20191113	X	--			X
EB095SC	EB095SC-A	11/12/2019	1006236.08	200154.72			6.2	5.9	95%	4.2	-2.7	0.0 - 1.5	EB095SC-A-000045-20191115	X	--	X	EBCOMP1	X
												2.5 - 3.4	EB095SC-A-075105-20191115	X	--			X
EB096SC	EB096SC-A	11/13/2019	1006239.21	200132.50			6.0	6.2	103%	2.9	-3.0	0.0 - 1.5	EB096SC-A-000045-20191115	X	X			X
												2.5 - 3.4	EB096SC-A-075105-20191115	X	--			X
EB097SC	EB097SC-A	11/13/2019	1006233.7	200113.72			6.0	5.9	98%	3.4	-3.0	0.0 - 1.5	EB097SC-A-000045-20191115	X	--			X
												2.5 - 3.4	EB097SC-A-075105-20191115	X	--	X	EBCOMP2	X
EB098SC	EB098SC-A	11/13/2019	1006234.05	200094.91			6.0	6.2	103%	4.6	-2.8	0.0 - 1.5	EB098SC-A-000045-20191115	X	--			X
												2.5 - 3.4	EB098SC-A-075105-20191115	X	X			X
EB099SC	EB099SC-A	11/13/2019	1006224.08	200073.84			6.0	5.4	90%	4.7	-2.7	0.0 - 1.5	EB099SC-A-000045-20191115	X	--			X
												2.5 - 3.4	EB099SC-A-075105-20191115	X	--			X

Notes:

--: indicates no information is applicable or available

1. Actual differentially corrected coordinates and mudlines for accepted sediment samples
2. Horizontal datum is NAD83 NYLI, State Plane feet
3. Vertical datum is NAVD88. Water depth presented is at the time of sample collection and measured by lead line
4. Waste characterization samples were submitted for the following analyses per testing group: Group A: TPH-DRO, TPH-GRO, and EOX; Group B: VOCs and TCLP VOCs; Group C: PCB Aroclors, SVOCs, TCLP SVOCs, TCLP metals, percent solids, total volatile solids, reactive sulfide and cyanide, cyanide, corrosivity (pH), oil and grease, ignitability, paint filter, TCLP pesticides, and TCLP herbicides
5. Group C composite samples were assigned unique sample IDs prior to submittal to laboratory for analysis

Acronyms and abbreviations:

%: percent
EOX: extractable organic halides
ID: identification
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988
NYLI: New York Long Island
SVOC: semivolatile organic compound
TCLP: toxicity characteristic leaching procedure
TPH-DRO: total petroleum hydrocarbons diesel range organics
TPH-GRO: total petroleum hydrocarbons gasoline range organics
VOC: volatile organic compound

Table 3b
Waste Characterization Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Conventional Parameters						
Ignitability (unitless)	4	0	0	--	--	--
Free liquid (unitless)	4	4	100	--	--	--
pH (standard unit)	4	4	100	7.7	8	7.9
Conventional Parameters (mg/kg)						
Cyanide	4	4	100	1.2 J	6.4	3.4
Cyanide, reactive	4	0	0	--	--	--
Extractable organic halides (EOX)	20	20	100	18 J	80 J	42
Sulfide, reactive	4	4	100	65	1,100	710
Conventional Parameters (wt%)						
Total Solids	4	4	100	28	44	34
Total volatile solids	4	4	100	23	31	26
Metals (mg/kg)						
Aluminum	4	4	100	6,600 J	11,000 J	8,800
Antimony	4	4	100	11 J	20 J	14
Arsenic	4	4	100	21	70	39
Barium	4	4	100	150	210	170
Beryllium	4	4	100	0.45 J	0.7	0.57
Boron	4	4	100	29	56	45
Cadmium	4	4	100	34 J	97	60
Chromium	4	4	100	460	1,900	1,000
Cobalt	4	4	100	12	21	16
Copper	4	4	100	1,100	2,700	1,700
Iron	4	4	100	30,000	41,000	37,000
Lead	4	4	100	930	1,500	1,200
Manganese	4	4	100	160 J	220	200
Mercury	4	4	100	3.6 J	11	6.6
Nickel	4	4	100	190	700	380
Selenium	4	4	100	3.9	12	6.5
Silver	4	4	100	6.5	20	12
Thallium	4	1	25	0.39	0.39	0.39
Tin	4	4	100	66	300	130
Vanadium	4	4	100	64	130	90
Zinc	4	4	100	3,300	13,000	6,900
Semivolatile Organics (µg/kg)						
1,2,4,5-Tetrachlorobenzene	4	0	0	--	--	--
1,2,4-Trichlorobenzene	4	0	0	--	--	--
1,2-Dichlorobenzene	4	1	25	130 J	130 J	130
1,3-Dichlorobenzene	4	0	0	--	--	--
1,4-Dichlorobenzene	4	3	75	98 J	280 J	170
2,2'-Oxybis (1-chloropropane)	4	0	0	--	--	--
2,3,4,6-Tetrachlorophenol	4	0	0	--	--	--
2,4,5-Trichlorophenol	4	0	0	--	--	--
2,4,6-Trichlorophenol	4	0	0	--	--	--
2,4-Dichlorophenol	4	0	0	--	--	--
2,4-Dimethylphenol	4	0	0	--	--	--
2,4-Dinitrophenol	4	0	0	--	--	--
2,4-Dinitrotoluene	4	0	0	--	--	--
2,6-Dinitrotoluene	4	0	0	--	--	--

Table 3b
Waste Characterization Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
2-Chloronaphthalene	4	0	0	--	--	--
2-Chlorophenol	4	0	0	--	--	--
2-Methylnaphthalene	4	4	100	420 J	4,300 J	1,900
2-Methylphenol (o-Cresol)	4	0	0	--	--	--
2-Nitroaniline	4	0	0	--	--	--
2-Nitrophenol	4	0	0	--	--	--
3,3'-Dichlorobenzidine	4	0	0	--	--	--
3-Methylphenol & 4-Methylphenol (m&p-Cresol)	4	3	75	200 J	660 J	360
3-Nitroaniline	4	0	0	--	--	--
4-Bromophenyl-phenyl ether	4	0	0	--	--	--
4-Chloro-3-methylphenol	4	0	0	--	--	--
4-Chloroaniline	4	0	0	--	--	--
4-Chlorophenyl phenyl ether	4	0	0	--	--	--
4-Nitroaniline	4	0	0	--	--	--
4-Nitrophenol	4	0	0	--	--	--
Acenaphthene	4	4	100	1,000	9,600	3,700
Acenaphthylene	4	4	100	910	1,600 J	1,200
Acetophenone	4	1	25	420 J	420 J	420
Aniline	4	0	0	--	--	--
Anthracene	4	4	100	2,100	18,000	6,700
Atrazine	4	0	0	--	--	--
Azobenzene	4	0	0	--	--	--
Benzaldehyde	4	0	0	--	--	--
Benzidine	4	0	0	--	--	--
Benzo(a)anthracene	4	4	100	3,000	36,000	13,000
Benzo(a)pyrene	4	4	100	2,500	25,000	9,100
Benzo(b)fluoranthene	4	4	100	3,200	35,000	13,000
Benzo(g,h,i)perylene	4	4	100	1,600	17,000	6,200
Benzo(k)fluoranthene	4	4	100	850	10,000	3,700
Benzoic acid	4	0	0	--	--	--
Benzyl alcohol	4	0	0	--	--	--
Biphenyl (1,1'-Biphenyl)	4	1	25	1,100 J	1,100 J	1,100
bis(2-Chloroethoxy)methane	4	0	0	--	--	--
bis(2-Chloroethyl)ether	4	0	0	--	--	--
bis(2-Ethylhexyl)phthalate	4	4	100	300,000	940,000	530,000
Butylbenzyl phthalate	4	0	0	--	--	--
Caprolactam	4	0	0	--	--	--
Carbazole	4	4	100	420 J	10,000	3,100
Chrysene	4	4	100	3,000	27,000	10,000
Di-n-butyl phthalate	4	1	25	410 J	410 J	410
Di-n-octyl phthalate	4	0	0	--	--	--
Dibenzo(a,h)anthracene	4	4	100	350	3,900	1,400
Dibenzofuran	4	4	100	330 J	7,200	2,300
Diethyl phthalate	4	0	0	--	--	--
Dimethyl phthalate	4	0	0	--	--	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	4	0	0	--	--	--
Fluoranthene	4	4	100	6,600	71,000	25,000
Fluorene	4	4	100	700	11,000	3,900
Hexachlorobenzene	4	0	0	--	--	--

Table 3b
Waste Characterization Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	4	0	0	--	--	--
Hexachlorocyclopentadiene	4	0	0	--	--	--
Hexachloroethane	4	0	0	--	--	--
Indeno(1,2,3-c,d)pyrene	4	4	100	1,500	20,000	6,900
Isophorone	4	0	0	--	--	--
n-Nitrosodi-n-propylamine	4	0	0	--	--	--
n-Nitrosodimethylamine	4	0	0	--	--	--
n-Nitrosodiphenylamine	4	0	0	--	--	--
Naphthalene	4	4	100	890	12,000	4,000
Nitrobenzene	4	0	0	--	--	--
Pentachloronitrobenzene (Quintozene)	4	0	0	--	--	--
Pentachlorophenol	4	0	0	--	--	--
Phenanthrene	4	4	100	3,800	65,000	22,000
Phenol	4	0	0	--	--	--
Pyrene	4	4	100	7,400	62,000	23,000
Pyridine	4	0	0	--	--	--
PCB Aroclors (µg/kg)						
Aroclor 1016	4	0	0	--	--	--
Aroclor 1221	4	0	0	--	--	--
Aroclor 1232	4	0	0	--	--	--
Aroclor 1242	4	4	100	2,400	6,800	5,100
Aroclor 1248	4	0	0	--	--	--
Aroclor 1254	4	4	100	2,800	6,500	4,600
Aroclor 1260	4	4	100	2,000	2,600	2,300
Aroclor 1262	4	0	0	--	--	--
Aroclor 1268	4	0	0	--	--	--
Total Petroleum Hydrocarbons (mg/kg)						
Oil & grease (HEM)	4	4	100	79,000	120,000	98,000
Gasoline range hydrocarbons	20	20	100	21	110	45
Diesel range organics (C10 - C28)	20	20	100	9,400	43,000	23,000

Notes:
Percent detected results are rounded to the nearest whole number. Minimum, maximum, and arithmetic average results are rounded to two significant figures, except where trailing zeros are not shown, resulting in one significant figure
--: indicates no information is applicable or available
J: estimated value

Acronyms:
µg/kg: micrograms per kilogram
Max: maximum
mg/kg: milligrams per kilogram
Min: minimum
wt%: weight percent

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Metals (SW1311) (µg/L)						
Arsenic	4	1	25	92	92	92
Barium	4	4	100	260	450	340
Cadmium	4	1	25	51	51	51
Chromium	4	0	0	--	--	--
Lead	4	1	25	78 J	78 J	78
Mercury	3	0	0	--	--	--
Selenium	4	0	0	--	--	--
Silver	4	0	0	--	--	--
Metals (SW1312) (µg/L)						
Copper	3	3	100	7 J	650	360
Lead	3	2	67	160	260	210
Volatile Organics (SW1311) (µg/L)						
1,1,1,2-Tetrachloroethane	4	0	0	--	--	--
1,1,1-Trichloroethane	4	0	0	--	--	--
1,1,2,2-Tetrachloroethane	4	0	0	--	--	--
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	4	0	0	--	--	--
1,1,2-Trichloroethane	4	0	0	--	--	--
1,1-Dichloroethane	4	0	0	--	--	--
1,1-Dichloroethene	4	0	0	--	--	--
1,1-Dichloropropene	4	0	0	--	--	--
1,2,3-Trichlorobenzene	4	0	0	--	--	--
1,2,3-Trichloropropane	4	0	0	--	--	--
1,2,4-Trichlorobenzene	4	0	0	--	--	--
1,2,4-Trimethylbenzene	4	0	0	--	--	--
1,2-Dibromo-3-chloropropane	4	0	0	--	--	--
1,2-Dichlorobenzene	4	0	0	--	--	--
1,2-Dichloroethane	4	0	0	--	--	--
1,2-Dichloroethene, cis-	4	0	0	--	--	--
1,2-Dichloroethene, trans-	4	0	0	--	--	--
1,2-Dichloropropane	4	0	0	--	--	--
1,3,5-Trichlorobenzene	3	0	0	--	--	--
1,3,5-Trimethylbenzene (Mesitylene)	4	0	0	--	--	--
1,3-Dichlorobenzene	4	0	0	--	--	--
1,3-Dichloropropane	4	0	0	--	--	--
1,3-Dichloropropene, cis-	4	0	0	--	--	--
1,3-Dichloropropene, trans-	4	0	0	--	--	--
1,4-Dichloro-2-butene, trans-	4	0	0	--	--	--
1,4-Dichlorobenzene	4	0	0	--	--	--
1,4-Dichlorobutane	4	0	0	--	--	--
1,4-Diethylbenzene	4	0	0	--	--	--
1,4-Dioxane	4	0	0	--	--	--
2,2-Dichloropropane	4	0	0	--	--	--
2-Chlorotoluene	4	0	0	--	--	--
2-Hexanone (Methyl butyl ketone)	4	0	0	--	--	--
4-Chlorotoluene	4	0	0	--	--	--
4-Ethyltoluene	4	0	0	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)	4	0	0	--	--	--
Acetone	4	4	100	38 J	170	76
Acrylonitrile	4	0	0	--	--	--
Benzene	4	0	0	--	--	--

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Bromobenzene	4	0	0	--	--	--
Bromochloromethane	4	0	0	--	--	--
Bromodichloromethane	4	0	0	--	--	--
Bromoform (Tribromomethane)	4	0	0	--	--	--
Bromomethane (Methyl bromide)	4	0	0	--	--	--
Carbon disulfide	4	3	75	8.1 J	12 J	9.9
Carbon tetrachloride (Tetrachloromethane)	4	0	0	--	--	--
Chlorobenzene	4	0	0	--	--	--
Chloroethane	4	0	0	--	--	--
Chloroform	4	0	0	--	--	--
Chloromethane	4	0	0	--	--	--
Cyclohexane	4	0	0	--	--	--
Cymene, p- (4-Isopropyltoluene)	4	0	0	--	--	--
Dibromochloromethane	4	0	0	--	--	--
Dibromomethane	4	0	0	--	--	--
Dichlorodifluoromethane	4	0	0	--	--	--
Dichloromethane (Methylene chloride)	4	0	0	--	--	--
Diethyl ether	4	0	0	--	--	--
Diisopropylether (Isopropyl Ether)	4	0	0	--	--	--
Ethyl acetate	4	0	0	--	--	--
Ethyl methacrylate	4	0	0	--	--	--
Ethyl tert-butyl ether (ETBE)	4	0	0	--	--	--
Ethylbenzene	4	0	0	--	--	--
Ethylene dibromide (1,2-Dibromoethane)	4	0	0	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	4	0	0	--	--	--
Isopropylbenzene (Cumene)	4	0	0	--	--	--
m,p-Xylene	4	0	0	--	--	--
Methyl acetate	4	0	0	--	--	--
Methyl ethyl ketone (2-Butanone)	4	3	75	26 J	53	35
Methyl tert-butyl ether (MTBE)	4	0	0	--	--	--
Methylcyclohexane	4	0	0	--	--	--
n-Butylbenzene	4	0	0	--	--	--
n-Propylbenzene	4	0	0	--	--	--
Naphthalene	4	0	0	--	--	--
o-Xylene	4	0	0	--	--	--
sec-Butylbenzene	4	0	0	--	--	--
Styrene	4	0	0	--	--	--
tert-Amyl methyl ether (TAME)	3	0	0	--	--	--
tert-Butylbenzene	4	0	0	--	--	--
Tetrachloroethene (PCE)	3	0	0	--	--	--
Tetrahydrofuran	4	0	0	--	--	--
Toluene	4	0	0	--	--	--
Trichloroethene (TCE)	4	0	0	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)	4	0	0	--	--	--
Vinyl acetate	4	0	0	--	--	--
Vinyl chloride	4	0	0	--	--	--
Semivolatile Organics (SW1311) (µg/L)						
1,2,4-Trichlorobenzene	4	0	0	--	--	--
1,2-Dichlorobenzene	4	0	0	--	--	--
1,3-Dichlorobenzene	4	0	0	--	--	--
1,4-Dichlorobenzene	4	0	0	--	--	--

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
1-Methylnaphthalene	4	1	25	4.8 J	4.8 J	4.8
2,2'-Oxybis (1-chloropropane)	4	0	0	--	--	--
2,4,5-Trichlorophenol	4	0	0	--	--	--
2,4,6-Trichlorophenol	4	0	0	--	--	--
2,4-Dichlorophenol	4	0	0	--	--	--
2,4-Dimethylphenol	4	0	0	--	--	--
2,4-Dinitrophenol	4	0	0	--	--	--
2,4-Dinitrotoluene	4	0	0	--	--	--
2,6-Dinitrotoluene	4	0	0	--	--	--
2-Chloronaphthalene	4	0	0	--	--	--
2-Chlorophenol	4	0	0	--	--	--
2-Methylnaphthalene	4	0	0	--	--	--
2-Methylphenol (o-Cresol)	4	0	0	--	--	--
2-Nitroaniline	4	0	0	--	--	--
2-Nitrophenol	4	0	0	--	--	--
3,3'-Dichlorobenzidine	4	0	0	--	--	--
3-Methylphenol & 4-Methylphenol (m&p-Cresol)	4	0	0	--	--	--
3-Nitroaniline	4	0	0	--	--	--
4-Bromophenyl-phenyl ether	4	0	0	--	--	--
4-Chloro-3-methylphenol	4	0	0	--	--	--
4-Chloroaniline	4	0	0	--	--	--
4-Chlorophenyl phenyl ether	4	0	0	--	--	--
4-Nitroaniline	4	0	0	--	--	--
4-Nitrophenol	4	0	0	--	--	--
Acenaphthene	4	0	0	--	--	--
Acenaphthylene	4	0	0	--	--	--
Acetophenone	4	1	25	5.5 J	5.5 J	5.5
Aniline	4	0	0	--	--	--
Anthracene	4	0	0	--	--	--
Azobenzene	4	0	0	--	--	--
Benzidine	2	0	0	--	--	--
Benzo(a)anthracene	4	0	0	--	--	--
Benzo(a)pyrene	4	0	0	--	--	--
Benzo(b)fluoranthene	4	0	0	--	--	--
Benzo(g,h,i)perylene	4	0	0	--	--	--
Benzo(k)fluoranthene	4	0	0	--	--	--
Benzoic acid	4	0	0	--	--	--
Benzyl alcohol	4	0	0	--	--	--
Biphenyl (1,1'-Biphenyl)	4	0	0	--	--	--
bis(2-Chloroethoxy)methane	4	0	0	--	--	--
bis(2-Chloroethyl)ether	4	0	0	--	--	--
bis(2-Ethylhexyl)phthalate	4	0	0	--	--	--
Butylbenzyl phthalate	4	0	0	--	--	--
Carbazole	4	0	0	--	--	--
Chrysene	4	0	0	--	--	--
Di-n-butyl phthalate	4	0	0	--	--	--
Di-n-octyl phthalate	4	0	0	--	--	--
Dibenzo(a,h)anthracene	4	0	0	--	--	--
Dibenzofuran	4	0	0	--	--	--
Diethyl phthalate	4	0	0	--	--	--
Dimethyl phthalate	4	0	0	--	--	--

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	4	0	0	--	--	--
Fluoranthene	4	0	0	--	--	--
Fluorene	4	0	0	--	--	--
Hexachlorobenzene	4	0	0	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	4	0	0	--	--	--
Hexachlorocyclopentadiene	4	0	0	--	--	--
Hexachloroethane	4	0	0	--	--	--
Indeno(1,2,3-c,d)pyrene	4	0	0	--	--	--
Isophorone	4	0	0	--	--	--
n-Nitrosodi-n-propylamine	4	0	0	--	--	--
n-Nitrosodimethylamine	4	0	0	--	--	--
n-Nitrosodiphenylamine	4	0	0	--	--	--
Naphthalene	4	0	0	--	--	--
Nitrobenzene	4	0	0	--	--	--
Pentachlorophenol	4	0	0	--	--	--
Phenanthrene	4	0	0	--	--	--
Phenol	4	0	0	--	--	--
Pyrene	4	0	0	--	--	--
Pyridine	4	0	0	--	--	--
Polycyclic Aromatic Hydrocarbons (SW1312) (µg/L)						
1-Methyldibenzothiophene	3	3	100	0.0045 J	0.43	0.25
1-Methylnaphthalene	3	3	100	0.16	20	10
1-Methylphenanthrene	3	3	100	0.024	2.7	1.6
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	3	3	100	0.038	3.2	2
2,6-Dimethylnaphthalene	3	3	100	0.13	18	10
2-Methylanthracene	3	3	100	0.0044 J	0.78	0.4
2-Methyldibenzothiophene & 3-Methyldibenzothiophene	3	2	67	1.4	1.7	1.5
2-Methylnaphthalene	3	3	100	0.15	26	13
2-Methylphenanthrene	3	3	100	0.018	3.5	2
4-Methyldibenzothiophene	3	3	100	0.013	1.6	1
4-Methylphenanthrene & 9-Methylphenanthrene	3	3	100	0.017	2.8	1.6
Acenaphthene	3	3	100	0.13	10	4.7
Acenaphthylene	3	3	100	0.0022 J	0.34	0.17
Anthracene	3	3	100	0.03	4.1	1.9
Benzo(a)anthracene	3	3	100	0.0085 J	1.1	0.56
Benzo(a)pyrene	3	2	67	0.23	0.53	0.38
Benzo(b)fluoranthene	3	2	67	0.2	0.37	0.29
Benzo(e)pyrene	3	2	67	0.2	0.37	0.28
Benzo(g,h,i)perylene	3	2	67	0.11	0.21	0.16
Benzo(j,k)fluoranthene	3	2	67	0.15	0.36	0.25
Benzonaphthothiophene	3	3	100	0.0023 J	0.46	0.25
Benzothiophene	3	3	100	0.0057 J	0.23	0.12
Biphenyl (1,1'-Biphenyl)	3	2	67	0.038	0.16	0.097
Carbazole	3	3	100	0.011	1.8	0.8
Chrysene	3	2	67	0.59	1.1	0.86
Decalin, cis- & trans-	3	3	100	0.0046 J	3.1	1.9
Dibenzo(a,h)anthracene and Dibenzo(a,c)anthracene	3	2	67	0.028	0.059	0.044
Dibenzothiophene	3	3	100	0.022	2.9	1.6
Fluoranthene	3	3	100	0.035	4.5	2.3
Fluorene	3	3	100	0.069	6.3	3.1
Indeno(1,2,3-c,d)pyrene	3	2	67	0.084	0.18	0.13

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Naphthalene	3	3	100	0.2	39	16
Perylene	3	2	67	0.039	0.086	0.063
Phenanthrene	3	3	100	0.15	20	9.6
Pyrene	3	3	100	0.04	5.8	2.9
Retene	3	3	100	0.016	1.3	0.62
Alkylated Polycyclic Aromatic Hydrocarbons (SW1312) (µg/L)						
C1-Benzanthracenes/Chrysenes	3	3	100	0.006 J	0.92	0.47
C1-Benzo(b)thiophene	3	3	100	0.016	1.9	1
C1-Decalins	3	3	100	0.008 J	3.3	2
C1-Dibenzothiophenes	3	3	100	0.024	4	2.5
C1-Fluoranthenes/Pyrenes	3	3	100	0.025	3.2	1.7
C1-Fluorenes	3	3	100	0.05	4.3	2.6
C1-Naphthalenes	3	3	100	0.19	29	14
C1-Phenanthrenes/Anthracenes	3	3	100	0.085	12	7.1
C2-Benzanthracenes/Chrysenes	3	2	67	0.4	0.65	0.52
C2-Benzo(b)thiophene	3	3	100	0.021	2.5	1.4
C2-Decalins	3	2	67	1.8	2.1	1.9
C2-Dibenzothiophenes	3	3	100	0.03	3	2
C2-Fluorenes	3	3	100	0.06	4.2	2.8
C2-Naphthalenes	3	3	100	0.33	35	20
C2-Phenanthrenes/Anthracenes	3	3	100	0.048	6.4	4
C3-Benzanthracenes/Chrysenes	3	2	67	0.29	0.45	0.37
C3-Benzo(b)thiophene	3	3	100	0.027	2	1.3
C3-Decalins	3	2	67	1	1.1	1.1
C3-Dibenzothiophenes	3	3	100	0.017	1.5	0.97
C3-Fluorenes	3	3	100	0.036	2.4	1.6
C3-Naphthalenes	3	3	100	0.24	21	13
C3-Phenanthrenes/Anthracenes	3	3	100	0.023	2.3	1.4
C4-Benzanthracenes/Chrysenes	3	2	67	0.17	0.26	0.21
C4-Benzo(b)thiophene	3	3	100	0.019	1.1	0.7
C4-Decalins	3	2	67	1.2	1.3	1.2
C4-Dibenzothiophenes	3	3	100	0.0093 J	0.56	0.36
C4-Naphthalenes	3	3	100	0.093	8.7	5.3
C4-Phenanthrenes/Anthracenes	3	3	100	0.015	1.2	0.68
Pesticides (SW1311) (µg/L)						
4,4'-DDD (p,p'-DDD)	4	0	0	--	--	--
4,4'-DDE (p,p'-DDE)	4	0	0	--	--	--
4,4'-DDT (p,p'-DDT)	4	0	0	--	--	--
Aldrin	4	0	0	--	--	--
Chlordane	4	0	0	--	--	--
Chlordane, alpha- (Chlordane, cis-)	4	0	0	--	--	--
Chlordane, beta- (Chlordane, trans-)	4	0	0	--	--	--
Dieldrin	4	0	0	--	--	--
Endosulfan sulfate	4	0	0	--	--	--
Endosulfan, alpha- (I)	4	0	0	--	--	--
Endosulfan, beta (II)	4	0	0	--	--	--
Endrin	4	0	0	--	--	--
Endrin aldehyde	4	0	0	--	--	--
Endrin ketone	4	0	0	--	--	--
Heptachlor	4	0	0	--	--	--
Heptachlor epoxide	4	0	0	--	--	--

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Hexachlorocyclohexane (BHC), alpha-	4	0	0	--	--	--
Hexachlorocyclohexane (BHC), beta-	4	0	0	--	--	--
Hexachlorocyclohexane (BHC), delta-	4	0	0	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)	4	0	0	--	--	--
Methoxychlor	4	0	0	--	--	--
Toxaphene	4	0	0	--	--	--
Herbicides (SW1311) (µg/L)						
2,2-Dichloropropionic acid (Dalapon)	4	0	0	--	--	--
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	4	0	0	--	--	--
2,4,5-TP (Silvex)	4	0	0	--	--	--
2,4-D (2,4-Dichlorophenoxyacetic acid)	4	0	0	--	--	--
2,4-DB (2,4-D derivative)	4	0	0	--	--	--
Dicamba	4	0	0	--	--	--
Dichloroprop	4	0	0	--	--	--
Dinoseb	4	0	0	--	--	--
Mecoprop (MCPP)	4	0	0	--	--	--
Mephanac (MCPA)	4	0	0	--	--	--
Dioxin Furans (SW1312) (ng/L)						
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	3	0	0	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3	0	0	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3	1	33	0.0011 J	0.0011 J	0.0011
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3	1	33	0.0031 J	0.0031 J	0.0031
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3	1	33	0.002 J	0.002 J	0.002
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3	2	67	0.026	0.034	0.03
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3	2	67	0.15	0.22	0.18
Total Tetrachlorodibenzo-p-dioxin (TCDD)	3	0	0	--	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)	3	0	0	--	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)	3	2	67	0.0044	0.025 J	0.015
Total Heptachlorodibenzo-p-dioxin (HpCDD)	3	2	67	0.047	0.068	0.057
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3	2	67	0.0029 J	0.0031 J	0.003
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3	2	67	0.0025 J	0.0048 J	0.0036
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3	2	67	0.0088 J	0.011 J	0.0099
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3	2	67	0.0069 J	0.0084 J	0.0077
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3	2	67	0.0029 J	0.0062 J	0.0046
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3	0	0	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3	2	67	0.0029 J	0.0048 J	0.0038
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3	2	67	0.035	0.061	0.048
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3	2	67	0.0011 J	0.0022 J	0.0016
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3	2	67	0.025 J	0.046 J	0.035
Total Tetrachlorodibenzofuran (TCDF)	3	2	67	0.073 J	0.087 J	0.08
Total Pentachlorodibenzofuran (PeCDF)	3	2	67	0.074 J	0.11 J	0.09
Total Hexachlorodibenzofuran (HxCDF)	3	2	67	0.043 J	0.08 J	0.062
Total Heptachlorodibenzofuran (HpCDF)	3	2	67	0.053 J	0.098 J	0.076
PCB Congeners (SW1312) (ng/L)						
PCB-001	3	3	100	0.5	57 J	34
PCB-002	3	3	100	0.034	4.8	3
PCB-003	3	3	100	0.16	25	16
PCB-004	3	3	100	0.25	33	17
PCB-005	3	3	100	0.014	2.5	1.3
PCB-006	3	3	100	0.072	13	6.7
PCB-007	3	3	100	0.021	4.3	2.4

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-008	3	3	100	0.27	56 J	29
PCB-009	3	3	100	0.029	5.2	2.7
PCB-010	3	3	100	0.018	2.3	1.2
PCB-011	3	2	67	0.41	0.63	0.52
PCB-012/013	3	3	100	0.018 J	4.7	2.6
PCB-014	3	0	0	--	--	--
PCB-015	3	3	100	0.074	20	10
PCB-016	3	3	100	0.14	29	14
PCB-017	3	3	100	0.12	29	14
PCB-018/030	3	3	100	0.25	54	27
PCB-019	3	3	100	0.039 J	6.2	3.1
PCB-020/028	3	3	100	0.2	53	26
PCB-021/033	3	3	100	0.14	35	17
PCB-022	3	3	100	0.074	19	9.2
PCB-023	3	2	67	0.03	0.082	0.056
PCB-024	3	2	67	0.35	0.94	0.64
PCB-025	3	3	100	0.015	3.7	1.8
PCB-026/029	3	3	100	0.039	11	5.1
PCB-027	3	3	100	0.021	4.2	2
PCB-031	3	3	100	0.19	48 J	24
PCB-032	3	3	100	0.082	14	7.1
PCB-034	3	2	67	0.074	0.19	0.13
PCB-035	3	2	67	0.33	0.64	0.49
PCB-036	3	0	0	--	--	--
PCB-037	3	3	100	0.043 J	11	5.4
PCB-038	3	0	0	--	--	--
PCB-039	3	2	67	0.087	0.21	0.15
PCB-040/071	3	3	100	0.086	11	6.5
PCB-041	3	3	100	0.018 J	2.9	1.5
PCB-042	3	3	100	0.046	6.8	4
PCB-043	3	2	67	0.66	0.91	0.79
PCB-044/047/065	3	3	100	0.21	24	15
PCB-045	3	3	100	0.035	5.3	2.8
PCB-046	3	3	100	0.016	2.5	1.3
PCB-048	3	3	100	0.041	6	3.5
PCB-049/069	3	3	100	0.12	14	8.7
PCB-050/053	3	3	100	0.033	5.1	2.8
PCB-051	3	3	100	0.016	1.3	0.68
PCB-052	3	3	100	0.29	33	21
PCB-054	3	2	67	0.048	0.091	0.07
PCB-055	3	2	67	0.23	0.34	0.29
PCB-056	3	3	100	0.066	9	5.3
PCB-057	3	2	67	0.043	0.096	0.069
PCB-058	3	0	0	--	--	--
PCB-059/062/075	3	3	100	0.015 J	2	1.1
PCB-060	3	3	100	0.045	6.2	3.7
PCB-061/070/074/076	3	3	100	0.3	37	23
PCB-063	3	2	67	0.66	0.84	0.75
PCB-064	3	3	100	0.089	11	6.5
PCB-066	3	3	100	0.12	17	10
PCB-067	3	2	67	0.43	0.57	0.5

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-068	3	1	33	0.038	0.038	0.038
PCB-072	3	2	67	0.062	0.074	0.068
PCB-073	3	1	33	0.034	0.034	0.034
PCB-077	3	3	100	0.015	1.7	0.96
PCB-078	3	0	0	--	--	--
PCB-079	3	2	67	0.16	0.17	0.16
PCB-080	3	0	0	--	--	--
PCB-081	3	2	67	0.055	0.088	0.071
PCB-082	3	3	100	0.04	3.5	2.3
PCB-083	3	3	100	0.013 J	1.3	0.72
PCB-084	3	3	100	0.12	9.9	6.6
PCB-085/116	3	3	100	0.054	4.8	3.1
PCB-086/087/097/108/119/125	3	3	100	0.24	21	14
PCB-088	3	0	0	--	--	--
PCB-089	3	2	67	0.34	0.43	0.38
PCB-090/101/113	3	3	100	0.37	32	21
PCB-091	3	3	100	0.047	3.9	2.5
PCB-092	3	3	100	0.063	5.8	3.8
PCB-093/100	3	2	67	0.12	0.3	0.21
PCB-094	3	2	67	0.14	0.16	0.15
PCB-095	3	3	100	0.33	27	17
PCB-096	3	2	67	0.22	0.27	0.25
PCB-098	3	0	0	--	--	--
PCB-099	3	3	100	0.13	12	7.3
PCB-102	3	2	67	0.85	0.91	0.88
PCB-103	3	2	67	0.13	0.18	0.16
PCB-104	3	0	0	--	--	--
PCB-105	3	3	100	0.11	9.6	5.8
PCB-106	3	0	0	--	--	--
PCB-107/124	3	3	100	0.01 J	0.97	0.61
PCB-109	3	3	100	0.015	1.4	0.91
PCB-110	3	3	100	0.36	29	19
PCB-111	3	0	0	--	--	--
PCB-112	3	0	0	--	--	--
PCB-114	3	2	67	0.51	0.54	0.53
PCB-115	3	0	0	--	--	--
PCB-117	3	3	100	0.006 J	0.59	0.38
PCB-118	3	3	100	0.24	21	13
PCB-120	3	2	67	0.017	0.028	0.023
PCB-121	3	0	0	--	--	--
PCB-122	3	2	67	0.32	0.33	0.32
PCB-123	3	2	67	0.29	0.3	0.29
PCB-126	3	2	67	0.042	0.045	0.043
PCB-127	3	0	0	--	--	--
PCB-128/166	3	3	100	0.04	3.6	2.2
PCB-129/138/163	3	3	100	0.29	26	15
PCB-130	3	3	100	0.017	1.6	0.93
PCB-131	3	2	67	0.3	0.4	0.35
PCB-132	3	3	100	0.11	9	5.2
PCB-133	3	2	67	0.23	0.27	0.25
PCB-134	3	3	100	0.021	1.7	1

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-135/151	3	3	100	0.096	8	4.7
PCB-136	3	3	100	0.048	3.8	2.3
PCB-137	3	3	100	0.011	1.3	0.76
PCB-139/140	3	2	67	0.32	0.41	0.37
PCB-141	3	3	100	0.056	5.1	3
PCB-142	3	0	0	--	--	--
PCB-143	3	0	0	--	--	--
PCB-144	3	3	100	0.014 J	1.4	0.78
PCB-145	3	1	33	0.01 J	0.01 J	0.01
PCB-146	3	3	100	0.03	2.6	1.5
PCB-147/149	3	3	100	0.22	19	11
PCB-148	3	2	67	0.018	0.028	0.023
PCB-150	3	2	67	0.027	0.032 J	0.03
PCB-152	3	2	67	0.021	0.022	0.021
PCB-153/168	3	3	100	0.19	18	10
PCB-154	3	2	67	0.18	0.21	0.19
PCB-155	3	0	0	--	--	--
PCB-156/157	3	3	100	0.027	2.7	1.6
PCB-158	3	3	100	0.029	2.6	1.5
PCB-159	3	2	67	0.14	0.15	0.14
PCB-160	3	0	0	--	--	--
PCB-161	3	0	0	--	--	--
PCB-162	3	2	67	0.058	0.067	0.063
PCB-164	3	3	100	0.018	1.5	0.86
PCB-165	3	0	0	--	--	--
PCB-167	3	2	67	0.67	0.82	0.74
PCB-169	3	0	0	--	--	--
PCB-170	3	3	100	0.045	4.4	2.6
PCB-171/173	3	3	100	0.013 J	1.4	0.83
PCB-172	3	2	67	0.56	0.71	0.64
PCB-174	3	3	100	0.051 J	4.7	2.9
PCB-175	3	2	67	0.16	0.22	0.19
PCB-176	3	3	100	0.0058 J	0.62	0.38
PCB-177	3	3	100	0.028	2.4	1.5
PCB-178	3	3	100	0.008 J	0.85	0.51
PCB-179	3	3	100	0.019	1.7	1
PCB-180/193	3	3	100	0.089	9.5	5.6
PCB-181	3	2	67	0.032 J	0.039	0.036
PCB-182	3	2	67	0.016	0.02	0.018
PCB-183	3	3	100	0.03	3	1.8
PCB-184	3	0	0	--	--	--
PCB-185	3	2	67	0.28	0.36	0.32
PCB-186	3	0	0	--	--	--
PCB-187	3	3	100	0.055	5.1	3.1
PCB-188	3	0	0	--	--	--
PCB-189	3	2	67	0.11	0.15	0.13
PCB-190	3	2	67	0.56	0.78	0.67
PCB-191	3	2	67	0.14	0.17	0.15
PCB-192	3	0	0	--	--	--
PCB-194	3	2	67	1.6	2.2	1.9
PCB-195	3	2	67	0.57	0.75	0.66

Table 3c
Waste Characterization Leachate Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-196	3	2	67	0.78	1.2	1
PCB-197	3	2	67	0.062	0.087	0.075
PCB-198/199	3	3	100	0.019 J	3	1.5
PCB-200	3	2	67	0.22	0.34	0.28
PCB-201	3	2	67	0.24	0.44	0.34
PCB-202	3	2	67	0.27	0.83	0.55
PCB-203	3	2	67	0.79	1.7	1.2
PCB-204	3	0	0	--	--	--
PCB-205	3	2	67	0.066	0.1	0.085
PCB-206	3	2	67	0.56	2.9	1.7
PCB-207	3	2	67	0.066	0.28	0.17
PCB-208	3	2	67	0.13	1.1	0.62
PCB-209	3	2	67	0.27	2.7	1.5

Notes:
Percent detected results are rounded to the nearest whole number. Minimum, maximum, and arithmetic average results are rounded to two significant figures, except where trailing zeros are not shown, resulting in one significant figure
-- : indicates no information that is appropriate or available
J: estimated value

Acronyms:
µg/L: micrograms per liter
Max: maximum
Min: minimum
ng/L: nanograms per liter
PCB: polychlorinated biphenyl

Table 3d
Waste Characterization Sediment Sample Visual Observation and Shake Test Summary

Station ID	Core ID	Core Processing Visual Observations: Interval (feet below mudline)	Sheen Color	Sheen Distribution	Amount	Percent	Shake Testing Results: Interval (feet below mudline)	Sheen Color	NAPL Observation
EB085SC	EB085SC-A	0.0 - 5.4	Silvery	Covered	Trace	<2%	3.6	Silvery	None
							4.9	Silvery	None
EB086SC	EB086SC-A	0.0 - 6.0	Silvery	Covered	Trace	<2%	0.3	Silvery	None
							2.3	Silvery	None
							5.7	Silvery	None
EB087SC	EB087SC-A	0.0 - 2.6	Silvery	Covered	Trace	<2%	0.3	Silvery	None
		2.6 - 3.3	Rainbow	Florets	Trace	<2%	3.0	Rainbow	None
		3.3 - 5.7	Silvery	Covered	Trace	<2%	4.9	Silvery	None
	EB087SC-B	0.0 - 5.8	Silvery	Covered	Trace	<2%	1.0	Silvery	None
							3.0	Silvery	None
							4.9	Silvery	None
EB088SC	EB088SC-A	0.0 - 2.2	Rainbow	Covered	Trace	<2%	0.0	Silvery	None
							1.6	Silvery	None
		2.2 - 4.3	Silvery	Covered	Trace	<2%	3.6	Silvery	None
		4.3 - 4.6	Rainbow	Streaks	Slight	2 to 15%	4.3	Silvery	None
		5.6 - 5.9	Rainbow	Streaks	Slight	2 to 15%	5.7	Silvery	None
EB089SC	EB089SC-A	0.0 - 5.5	Rainbow	Covered	Trace	<2%	0.3	Silvery	None
							3.6	Silvery	None
EB090SC	EB090SC-A	0.0 - 5.2	Rainbow	Covered	Slight	2 to 15%	0.3	Rainbow	None
							0.7	Rainbow	None
							3.0	Rainbow	None
							4.9	Rainbow	None
EB091SC	EB091SC-A	0.0 - 5.4	Rainbow	Florets	Slight	2 to 15%	0.0	Silvery	None
							2.3	Silvery	None
							4.9	Silvery	None
EB092SC	EB092SC-A	0.0 - 5.6	Silvery	Covered	Slight	2 to 15%	0.0	Silvery	None
							3.0	Silvery	None
							5.6	Silvery	None
EB093SC	EB093SC-A	0.0 - 5.6	Rainbow	Florets	Slight	2 to 15%	0.0	Silvery	None
							3.0	Silvery	None
							5.6	Silvery	None
EB094SC	EB094SC-A	0.0 - 5.6	Silvery	Covered	Trace	<2%	0.0	Silvery	None
							1.0	Silvery	None
							4.3	Silvery	None
							5.6	Silvery	None
EB095SC	EB095SC-A	0.0 - 5.8	Silvery	Covered	Trace	<2%	0.0	Silvery	None
							2.3	Silvery	None
							5.6	Silvery	None
EB096SC	EB096SC-A	0.0 - 6.0	Silvery	Covered	Slight	2 to 15%	0.0	Silvery	None
							2.3	Silvery	None
							5.6	Silvery	None
EB097SC	EB097SC-A	0.0 - 5.8	Silvery	Covered	Slight	2 to 15%	0.0	Silvery	None
							2.3	Silvery	None
							5.6	Silvery	None
EB098SC	EB098SC-A	0.0 - 2.0	Silvery	Covered	Slight	2 to 15%	0.0	Silvery	None
	EB098SC-A	2.0 - 2.5	Silvery	Covered	Moderate	15 to 40%	2.3	Silvery	None
	EB098SC-A	2.5 - 6.1	Silvery	Covered	Slight	2 to 15%	5.6	Silvery	None
EB099SC	EB099SC-A	0.0 - 5.3	Silvery	Covered	Slight	2 to 15%	0.0	Silvery	None
							3.0	Silvery	None
							4.9	Silvery	None

Notes:
--: indicates no information is applicable or available
1. This table summarizes positive visual observations only. No sheen was observed unless noted above. See Sediment Core Logs and In-Water Boring Logs in Attachment B2-5 for more information
2. See Table 3a for Station ID and Core ID specific data

Acronyms and abbreviations:
%: percent
ID: identification

Table 4a
Surface Sediment Chemical Sample Collection Summary

			Actual Coordinates[1,2]					Surface Sediment Testing	
Station ID	Grab ID	Date Collected	Easting (X)	Northing (Y)	Water Depth (feet)[3]	Sample ID	Sample Interval (feet below mudline)	Chemistry[4]	Archive
EB071SG	EB071SG	12/12/2019	1005853.38	200164.08	12.4	EB071SG-000015-20191212	0.0 - 0.5	X	X
EB072SG	EB072SG	12/12/2019	1005900.32	200194.26	13.1	EB072SG-000015-20191212	0.0 - 0.5	X	X
EB073SG	EB073SG	12/12/2019	1005936.20	200144.24	11.7	EB073SG-000015-20191212	0.0 - 0.5	X	X
EB074SG	EB074SG	12/12/2019	1006016.32	200177.13	12.4	EB074SG-000015-20191212	0.0 - 0.5	X	X

Notes:
1. Actual differentially corrected coordinates and mudlines for accepted surface sediment samples
2. Horizontal datum is NAD83 NYLI, State Plane feet
3. Vertical datum is NAVD88. Water depth presented is at the time of sample collection and measured by lead line
4. Chemistry testing includes: D/F, PAHs and alkylated PAHs, PCBs, copper, lead, TOC, and TS

Acronyms:
D/F: dioxin/furan
ID: identification
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988
NYLI: New York Long Island
PAH: polycyclic aromatic hydrocarbon
PCB: polychlorinated biphenyl
TOC: total organic carbon
TS: total solids

Table 4b
Surface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Conventional Parameters (wt%)						
Total organic carbon	4	4	100	11	14	12
Total Solids	4	4	100	18	24	21
Metals (mg/kg)						
Copper	4	4	100	550	950	730
Lead	4	4	100	440	710	530
Polycyclic Aromatic Hydrocarbons (µg/kg)						
1-Methyldibenzothiophene	4	4	100	76 J	230	130
1-Methylnaphthalene	4	4	100	190	340	260
1-Methylphenanthrene	4	4	100	260	840	430
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	4	4	100	72 J	760	300
2,6-Dimethylnaphthalene	4	4	100	400	1,100	600
2-Methylanthracene	4	4	100	270	590	390
2-Methyldibenzothiophene & 3-Methyldibenzothiophene	4	4	100	130	440	220
2-Methylnaphthalene	4	4	100	460	900	640
2-Methylphenanthrene	4	4	100	280	420	350
4-Methyldibenzothiophene	4	4	100	180	800	390
4-Methylphenanthrene & 9-Methylphenanthrene	4	4	100	450	1,400	750
Acenaphthene	4	4	100	410	710	560
Acenaphthylene	4	4	100	710	1,400	970
Anthracene	4	4	100	1,100	2,100	1,500
Benzo(a)anthracene	4	4	100	3,700	6,800	5,100
Benzo(a)pyrene	4	4	100	5,300	8,100	6,700
Benzo(b)fluoranthene	4	4	100	5,600	8,800	6,800
Benzo(e)pyrene	4	4	100	4,500	6,600	5,400
Benzo(g,h,i)perylene	4	4	100	4,600	6,600	5,400
Benzo(j,k)fluoranthene	4	4	100	4,600	6,500	5,500
Benzonaphthothiophene	4	4	100	950	1,600	1,200
Benzothiophene	4	4	100	45 J	91 J	68
Biphenyl (1,1'-Biphenyl)	4	4	100	120	270	190
Carbazole	4	4	100	360	540	410
Chrysene	4	4	100	5,100	8,000	6,100
Decalin, cis- & trans-	4	4	100	190 J	510	300
Dibenzo(a,h)anthracene and Dibenzo(a,c)anthracene	4	4	100	1,200	1,900	1,500
Dibenzothiophene	4	4	100	270	380	300
Fluoranthene	4	4	100	6,700	11,000	8,100
Fluorene	4	4	100	330	380	360
Indeno(1,2,3-c,d)pyrene	4	4	100	4,000	5,900	4,900
Naphthalene	4	4	100	1,100	2,300	1,600
Perylene	4	4	100	1,500	2,400	1,900
Phenanthrene	4	4	100	2,300	3,000	2,500
Pyrene	4	4	100	7,000	12,000	8,800
Retene	4	2	50	650	1,200	940
Total HPAH (10 of 17) (U = 0)	4	4	100	48,000	75,000	59,000
Total HPAH (10 of 17) (U = MDL)	4	4	100	48,000	75,000	59,000
Total LPAH (7 of 17) (U = 0)	4	4	100	7,200	10,000	8,100

Table 4b
Surface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Total LPAH (7 of 17) (U = MDL)	4	4	100	7,200	10,000	8,100
Total PAH (17) (U = 0)	4	4	100	55,000	85,000	67,000
Total PAH (17) (U = MDL)	4	4	100	55,000	85,000	67,000
Alkylated and Polycyclic Aromatic Hydrocarbons (µg/kg)						
Total PAH NC (34) (U = 0)	4	4	100	98,000	180,000	130,000
Total PAH NC (34) (U = MDL)	4	4	100	98,000	180,000	130,000
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)						
C1-Benzanthracenes/Chrysenes	4	4	100	4,100	6,200	5,000
C1-Benzo(b)thiophene	4	4	100	110 J	190	140
C1-Decalins	4	4	100	770	2,700	1,600
C1-Dibenzothiophenes	4	4	100	440	1,600	820
C1-Fluoranthenes/Pyrenes	4	4	100	4,700	7,700	6,000
C1-Fluorenes	4	4	100	380	1,000	630
C1-Naphthalenes	4	4	100	430	820	590
C1-Phenanthrenes/Anthracenes	4	4	100	1,700	4,600	2,600
C2-Benzanthracenes/Chrysenes	4	4	100	3,700	5,100	4,200
C2-Benzo(b)thiophene	4	4	100	150	300	200
C2-Decalins	4	4	100	3,100	6,700	4,400
C2-Dibenzothiophenes	4	4	100	1,500	3,900	2,400
C2-Fluorenes	4	4	100	1,800	5,500	3,300
C2-Naphthalenes	4	4	100	730	1,700	1,000
C2-Phenanthrenes/Anthracenes	4	4	100	2,700	9,600	5,200
C3-Benzanthracenes/Chrysenes	4	4	100	3,600	4,900	4,000
C3-Benzo(b)thiophene	4	4	100	400	830	550
C3-Decalins	4	4	100	3,100	5,800	3,900
C3-Dibenzothiophenes	4	4	100	2,000	3,900	2,700
C3-Fluorenes	4	4	100	2,900	6,900	4,700
C3-Naphthalenes	4	4	100	920	6,300	2,700
C3-Phenanthrenes/Anthracenes	4	4	100	2,900	7,100	4,500
C4-Benzanthracenes/Chrysenes	4	4	100	2,200	3,000	2,500
C4-Benzo(b)thiophene	4	4	100	450	910	590
C4-Decalins	4	4	100	5,000	8,800	6,100
C4-Dibenzothiophenes	4	4	100	1,400	2,300	1,700
C4-Naphthalenes	4	4	100	2,000	8,600	4,600
C4-Phenanthrenes/Anthracenes	4	4	100	1,900	3,600	2,400
Dioxin Furans (ng/kg)						
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4	1	25	6 J	6 J	6
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4	4	100	11 J	25 J	18
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4	4	100	26 J	34 J	29
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4	4	100	66 J	91	80
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4	4	100	55 J	74	62
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4	4	100	1,700	2,100	1,900
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4	4	100	15,000	20,000	17,000
Total Tetrachlorodibenzo-p-dioxin (TCDD)	4	4	100	71	100 J	84
Total Pentachlorodibenzo-p-dioxin (PeCDD)	4	4	100	120 J	220 J	160
Total Hexachlorodibenzo-p-dioxin (HxCDD)	4	4	100	620 J	740	660

Table 4b
Surface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Total Heptachlorodibenzo-p-dioxin (HpCDD)	4	4	100	3,400	4,000	3,800
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4	4	100	28 J	35	32
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	4	4	100	41 J	55 J	46
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4	4	100	52	130	79
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4	4	100	120	140	130
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4	4	100	72	100	89
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4	0	0	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4	4	100	63	94	74
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	4	4	100	1,000	1,300	1,100
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4	4	100	44 J	58 J	49
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4	4	100	1,200	1,600	1,400
Total Tetrachlorodibenzofuran (TCDF)	4	4	100	580 J	820 J	660
Total Pentachlorodibenzofuran (PeCDF)	4	4	100	720 J	1,400 J	970
Total Hexachlorodibenzofuran (HxCDF)	4	4	100	1,000	1,500	1,200
Total Heptachlorodibenzofuran (HpCDF)	4	4	100	1,800	2,100 J	1,900
Total Dioxin/Furan TEQ 1998 (Avian) (U = 0)	4	4	100	150 J	250 J	190
Total Dioxin/Furan TEQ 1998 (Fish) (U = 0)	4	4	100	100 J	160 J	120
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	4	4	100	120 J	160 J	130
Total Dioxin/Furan TEQ 1998 (Avian) (U = MDL)	4	4	100	150 J	260 J	190
Total Dioxin/Furan TEQ 1998 (Fish) (U = MDL)	4	4	100	110 J	170 J	130
Total Dioxin/Furan TEQ 2005 (Mammal) (U = MDL)	4	4	100	120 J	170 J	130
PCB Congeners (ng/kg)						
PCB-001	4	4	100	1,600	5,400	2,700
PCB-002	4	4	100	220	560	320
PCB-003	4	4	100	1,600	4,600	2,500
PCB-004	4	4	100	6,300	17,000	10,000
PCB-005	4	4	100	420	1,300	710
PCB-006	4	4	100	2,900	9,100	5,200
PCB-007	4	4	100	880	2,900	1,600
PCB-008	4	4	100	14,000	40,000	24,000
PCB-009	4	4	100	1,000	3,300	1,900
PCB-010	4	4	100	580	1,300	870
PCB-011	4	4	100	4,900	8,100	6,100
PCB-012/013	4	4	100	3,100	5,400	3,800
PCB-014	4	0	0	--	--	--
PCB-015	4	4	100	21,000	31,000	24,000
PCB-016	4	4	100	21,000	38,000	28,000
PCB-017	4	4	100	34,000	54,000	40,000
PCB-018/030	4	4	100	53,000	90,000	65,000
PCB-019	4	4	100	4,800	9,200	6,500
PCB-020/028	4	4	100	76,000	110,000	87,000
PCB-021/033	4	4	100	27,000	54,000	37,000
PCB-022	4	4	100	21,000	35,000	26,000
PCB-023	4	3	75	65 J	110 J	85
PCB-024	4	4	100	980	1,700	1,200
PCB-025	4	4	100	5,900	8,700	6,800

Table 4b
Surface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-026/029	4	4	100	12,000	19,000	14,000
PCB-027	4	4	100	5,900	8,400	6,500
PCB-031	4	4	100	62,000	93,000	71,000
PCB-032	4	4	100	22,000	34,000	26,000
PCB-034	4	4	100	200 J	350	270
PCB-035	4	4	100	1,400 J	2,100	1,700
PCB-036	4	0	0	--	--	--
PCB-037	4	4	100	25,000	34,000	28,000
PCB-038	4	0	0	--	--	--
PCB-039	4	4	100	290 J	460	340
PCB-040/071	4	4	100	36,000	50,000	41,000
PCB-041	4	4	100	8,500	12,000	9,800
PCB-042	4	4	100	24,000	34,000	28,000
PCB-043	4	4	100	2,700	3,800	3,000
PCB-044/047/065	4	4	100	84,000	120,000	94,000
PCB-045	4	4	100	13,000	21,000	16,000
PCB-046	4	4	100	4,700	7,500	5,700
PCB-048	4	4	100	19,000	26,000	21,000
PCB-049/069	4	4	100	57,000	80,000	65,000
PCB-050/053	4	4	100	12,000	19,000	14,000
PCB-051	4	4	100	6,700	13,000	9,000
PCB-052	4	4	100	88,000	130,000	100,000
PCB-054	4	4	100	710	1,700	1,100
PCB-055	4	4	100	1,200	1,600	1,400
PCB-056	4	4	100	33,000	41,000	35,000
PCB-057	4	4	100	340	430	380
PCB-058	4	4	100	140	220	180
PCB-059/062/075	4	4	100	7,800	11,000	9,000
PCB-060	4	4	100	21,000	26,000	23,000
PCB-061/070/074/076	4	4	100	130,000	160,000	140,000
PCB-063	4	4	100	3,400	4,200	3,600
PCB-064	4	4	100	38,000	51,000	43,000
PCB-066	4	4	100	68,000	84,000	72,000
PCB-067	4	4	100	2,400	3,200	2,700
PCB-068	4	4	100	310 J	410	370
PCB-072	4	4	100	440	560 J	480
PCB-073	4	4	100	310 J	480	370
PCB-077	4	4	100	7,200	9,500	8,000
PCB-078	4	0	0	--	--	--
PCB-079	4	4	100	490	700	580
PCB-080	4	0	0	--	--	--
PCB-081	4	3	75	270	360	320
PCB-082	4	4	100	13,000	17,000	14,000
PCB-083	4	4	100	7,700	8,600	8,100
PCB-084	4	4	100	34,000	49,000	39,000
PCB-085/116	4	4	100	18,000	24,000	20,000

Table 4b
Surface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-086/087/097/108/119/125	4	4	100	85,000	110,000	92,000
PCB-088	4	0	0	--	--	--
PCB-089	4	4	100	1,300	2,000	1,500
PCB-090/101/113	4	4	100	130,000	190,000	150,000
PCB-091	4	4	100	19,000	28,000	22,000
PCB-092	4	4	100	24,000	33,000	26,000
PCB-093/100	4	4	100	3,200	6,100	4,200
PCB-094	4	4	100	950	1,600	1,100
PCB-095	4	4	100	99,000	150,000	110,000
PCB-096	4	4	100	950	1,600	1,200
PCB-098	4	0	0	--	--	--
PCB-099	4	4	100	50,000	70,000	55,000
PCB-102	4	4	100	3,900	5,400	4,300
PCB-103	4	4	100	1,400	2,700	1,800
PCB-104	4	4	100	220 J	470	320
PCB-105	4	4	100	45,000	57,000	49,000
PCB-106	4	0	0	--	--	--
PCB-107/124	4	4	100	4,100	5,600	4,600
PCB-109	4	4	100	6,500	8,600	7,300
PCB-110	4	4	100	140,000	190,000	150,000
PCB-111	4	0	0	--	--	--
PCB-112	4	0	0	--	--	--
PCB-114	4	4	100	2,500	3,400	2,800
PCB-115	4	0	0	--	--	--
PCB-117	4	4	100	3,600	4,300	3,800
PCB-118	4	4	100	100,000	140,000	110,000
PCB-120	4	0	0	--	--	--
PCB-121	4	0	0	--	--	--
PCB-122	4	4	100	1,600	2,200	1,800
PCB-123	4	4	100	1,800	2,800	2,200
PCB-126	4	4	100	990 J	1,100	1,100
PCB-127	4	0	0	--	--	--
PCB-128/166	4	4	100	21,000	30,000	24,000
PCB-129/138/163	4	4	100	130,000	200,000	160,000
PCB-130	4	4	100	8,400	12,000	10,000
PCB-131	4	4	100	1,900	2,800	2,200
PCB-132	4	4	100	42,000	65,000	50,000
PCB-133	4	4	100	1,600	2,500	1,900
PCB-134	4	4	100	8,400	15,000	11,000
PCB-135/151	4	4	100	36,000	69,000	46,000
PCB-136	4	4	100	17,000	28,000	21,000
PCB-137	4	4	100	6,300	9,800	7,700
PCB-139/140	4	4	100	2,200	3,200	2,600
PCB-141	4	4	100	26,000	41,000	30,000
PCB-142	4	0	0	--	--	--
PCB-143	4	0	0	--	--	--

Table 4b
Surface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-144	4	4	100	6,300	11,000	7,900
PCB-145	4	0	0	--	--	--
PCB-146	4	4	100	15,000	23,000	18,000
PCB-147/149	4	4	100	91,000	160,000	110,000
PCB-148	4	4	100	180	320	240
PCB-150	4	4	100	310 J	640	400
PCB-152	4	4	100	140 J	320	210
PCB-153/168	4	4	100	100,000	160,000	120,000
PCB-154	4	4	100	1,500	3,100	2,000
PCB-155	4	4	100	44 J	97 J	64
PCB-156/157	4	4	100	16,000	22,000	19,000
PCB-158	4	4	100	13,000	21,000	16,000
PCB-159	4	0	0	--	--	--
PCB-160	4	0	0	--	--	--
PCB-161	4	0	0	--	--	--
PCB-162	4	4	100	450 J	610	550
PCB-164	4	4	100	8,400	13,000	9,900
PCB-165	4	0	0	--	--	--
PCB-167	4	4	100	5,300	7,800	6,300
PCB-169	4	3	75	290 J	610 J	420
PCB-170	4	4	100	34,000	53,000	39,000
PCB-171/173	4	4	100	11,000	18,000	13,000
PCB-172	4	4	100	6,000	9,700	6,900
PCB-174	4	4	100	37,000	62,000	44,000
PCB-175	4	4	100	1,700	2,900	2,100
PCB-176	4	4	100	4,700	7,900	5,700
PCB-177	4	4	100	20,000	33,000	24,000
PCB-178	4	4	100	6,800	11,000	8,300
PCB-179	4	4	100	13,000	23,000	16,000
PCB-180/193	4	4	100	76,000	130,000	90,000
PCB-181	4	4	100	270	440	330
PCB-182	4	3	75	160 J	280 J	220
PCB-183	4	4	100	25,000	42,000	30,000
PCB-184	4	1	25	43 J	43 J	43
PCB-185	4	4	100	2,900 J	6,100	4,100
PCB-186	4	0	0	--	--	--
PCB-187	4	4	100	43,000	73,000	51,000
PCB-188	4	4	100	88 J	160 J	110
PCB-189	4	4	100	1,200	1,800	1,400
PCB-190	4	4	100	5,800	9,400	6,900
PCB-191	4	4	100	1,400	2,300	1,700
PCB-192	4	0	0	--	--	--
PCB-194	4	4	100	16,000	29,000	21,000
PCB-195	4	4	100	6,000	12,000	8,200
PCB-196	4	4	100	8,000	14,000	9,900
PCB-197	4	4	100	670 J	990	780

Table 4b
Surface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-198/199	4	4	100	17,000	27,000	20,000
PCB-200	4	4	100	2,300	3,900	2,700
PCB-201	4	4	100	2,900	4,600	3,400
PCB-202	4	4	100	3,900	6,100	4,500
PCB-203	4	4	100	9,100	15,000	11,000
PCB-204	4	0	0	--	--	--
PCB-205	4	4	100	800	1,400	1,000
PCB-206	4	4	100	8,700	13,000	10,000
PCB-207	4	4	100	1,000	1,500	1,100
PCB-208	4	4	100	2,700	3,500	3,000
PCB-209	4	4	100	5,100	7,000	6,000
Total Monochlorobiphenyl homologs (U = MDL)	4	4	100	3,500	11,000	5,500
Total Dichlorobiphenyl homologs (U = MDL)	4	4	100	57,000	120,000	78,000
Total Trichlorobiphenyl homologs (U = MDL)	4	4	100	370,000 J	600,000 J	450,000
Total Tetrachlorobiphenyl homologs (U = MDL)	4	4	100	680,000 J	910,000 J	750,000
Total Pentachlorobiphenyl homologs (U = MDL)	4	4	100	810,000	1,100,000 J	890,000
Total Hexachlorobiphenyl homologs (U = MDL)	4	4	100	570,000 J	900,000 J	680,000
Total Heptachlorobiphenyl homologs (U = MDL)	4	4	100	290,000 J	480,000 J	340,000
Total Octachlorobiphenyl homologs (U = MDL)	4	4	100	67,000	110,000	82,000
Total Nonachlorobiphenyl homologs (U = MDL)	4	4	100	12,000	18,000	14,000
Total PCB Congener (U = MDL)	4	4	100	2,900,000 J	4,300,000 J	3,300,000
Total PCB Congener TEQ 1998 (Avian) (U = MDL)	4	4	100	510 J	610 J	540
Total PCB Congener TEQ 1998 (Fish) (U = MDL)	4	4	100	6.8 J	7.6 J	7.2
Total PCB Congener TEQ 2005 (Mammal) (U = MDL)	4	4	100	110 J	130 J	120
Total Monochlorobiphenyl homologs (U = 0)	4	4	100	3,500	11,000	5,500
Total Dichlorobiphenyl homologs (U = 0)	4	4	100	57,000	120,000	78,000
Total Trichlorobiphenyl homologs (U = 0)	4	4	100	370,000 J	600,000 J	450,000
Total Tetrachlorobiphenyl homologs (U = 0)	4	4	100	680,000 J	910,000 J	750,000
Total Pentachlorobiphenyl homologs (U = 0)	4	4	100	810,000	1,100,000 J	890,000
Total Hexachlorobiphenyl homologs (U = 0)	4	4	100	570,000 J	900,000 J	670,000
Total Heptachlorobiphenyl homologs (U = 0)	4	4	100	290,000 J	480,000 J	340,000
Total Octachlorobiphenyl homologs (U = 0)	4	4	100	67,000	110,000	82,000
Total Nonachlorobiphenyl homologs (U = 0)	4	4	100	12,000	18,000	14,000

Table 4b
Surface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Total PCB Congener (U = 0)	4	4	100	2,900,000 J	4,300,000 J	3,300,000
Total PCB Congener TEQ 1998 (Avian) (U = 0)	4	4	100	510 J	590 J	540
Total PCB Congener TEQ 1998 (Fish) (U = 0)	4	4	100	6.8 J	7.5 J	7.2
Total PCB Congener TEQ 2005 (Mammal) (U = 0)	4	4	100	110 J	130 J	120

Notes:

Percent detected results are rounded to the nearest whole number. Minimum, maximum, and arithmetic average results are rounded to two significant figures, except where trailing zeros are not shown, resulting in one significant figure

--: indicates no information is applicable or available

J: estimated value

Acronyms:

µg/kg: micrograms per kilogram

Max: maximum

mg/kg: milligrams per kilogram

Min: minimum

ng/kg: nanograms per kilogram

PCB: polychlorinated biphenyl

wt%: weight percent

Table 5a
Subsurface Sediment and Native Material Chemical Sample Collection Summary

			Actual Coordinates[1,2]													Sediment and Native Material Testing		
Station ID	**Core ID**	**Date Collected**	**Easting (X)**	**Northing (Y)**	**Collection Method**	**Liner Type**	**Penetration (feet)**	**Core Recovery (feet)**	**Core Recovery (%)**	**Water Depth (feet)[3]**	**Mudline Elevation (NAVD88)**	**Sample Classification**	**Sample Interval (feet below mudline)**	**Sample Type**	**Sample ID**	**Chemistry[4]**	**In Situ Stabilization[5]**	**Archive**
EB071SC	EB071SC-B	11/7/2019	1005853.61	200179.96	Vibracore	Lexan	10	8.4	84%	9.4	-10.4	Subsurface Sediment Chemistry	0.5 - 2.5	Sediment	EB071SC-B-015075-20191111	X	--	X
													2.5 - 4.4	Sediment	EB071SC-B-075135-20191111	X	--	X
													4.4 - 6.4	Sediment	EB071SC-B-135195-20191111	X	--	X
													6.4 - 6.9	Sediment	EB071SC-B-195211-20191111	X	--	--
EB072SC	EB072SC-B	11/7/2019	1005893.43	200208.31			6.9	6.9	100%	9.5	-10.9		0.5 - 2.5	Sediment	EB072SC-B-015075-20191107	X	--	X
													2.5 - 4.4	Sediment	EB072SC-B-075135-20191107	X	--	X
													4.4 - 5.2	Sediment	EB072SC-B-135160-20191107	X	--	--
EB073SC	EB073SC-B	11/7/2019	1005941.00	200159.90			10	8.8	88%	12.0	-11.3		0.5 - 2.5	Sediment	EB073SC-B-015075-20191107	X	--	X
													2.5 - 4.4	Sediment	EB073SC-B-075135-20191107	X	--	X
													4.4 - 5.0	Sediment	EB073SC-B-135153-20191107	X	--	--
EB074SC	EB074SC-B	11/7/2019	1006018.58	200192.75			8.3	8.3	100%	10.8	-10.8		0.5 - 2.5	Sediment	EB074SC-B-015075-20191111	X	--	X
													2.5 - 4.4	Sediment	EB074SC-B-075135-20191111	X	--	X
													4.4 - 5.6	Sediment	EB074SC-B-135171-20191111	X	--	X
EB075SC	EB075SC-J	11/8/2019	1006146.70	200148.70			11	9.1	83%	5.5	-4.9[6]		1.0 - 1.5	Sediment	EB075SC-J-030045-20191116	X	--	X
													1.5 - 3.4	Sediment	EB075SC-J-045105-20191116	X	--	X
													3.4 - 5.4	Sediment	EB075SC-J-105165-20191116	X	--	X
													5.4 - 7.4	Sediment	EB075SC-J-165225-20191116	X	--	X
													7.4 - 9.1	Sediment	EB075SC-J-225277-20191116	X	--	X
	EB075SC-K	11/8/2019	1006148.10	200145.90			14	10.2	73%[7]	5.8	-4.8		9.1 - 10	Sediment	EB075SC-K-277304-20191116	X	--	X
	EB075SC-B	11/12/2019	1006150.86	200142.09			12.9	12.9	100%	4.6	-4.7		10.3 - 11.1	Sediment	EB075SC-B-315337-20191112	X	--	X
EB076SC	EB076SC-I	11/14/2019	1006229.71	200115.04			19.5	19.6	100%	5.6	-3.2		3.2 - 3.7	Sediment	EB076SC-I-098113-20191116	X	--	X
													3.7 - 5.7	Sediment	EB076SC-I-113173-20191116	X	--	X
													5.7 - 7.6	Sediment	EB076SC-I-173233-20191116	X	--	X
													7.6 - 9.6	Sediment	EB076SC-I-233293-20191116	X	--	X
													9.6 - 11.6	Sediment	EB076SC-I-293353-20191116	X	--	X
													11.6 - 13.5	Sediment	EB076SC-I-353413-20191116	X	--	X
													13.5 - 14.3	Sediment	EB076SC-I-413436-20191116	X	--	X
EB077SC	EB077SC-A	11/8/2019	1006111.14	200110.13			19.0	19.2	101%	3.5	-6.0	ISS Composite[8]	1.2 - 6.1	Sediment	EB001ISS-000150-20191111	X	X	X
													6.1 - 11.5	Sediment	EB002ISS-150300-20191111	X	X	X
													11.5 - 19.5	Native Material	EB003ISS-300450-20191111	X	X	X
	EB077SC-B		1006115.98	200108.30			19.0	19.2	101%	2.3	-5.7		0.9 - 5.8	Sediment	EB001ISS-000150-20191111	X	X	X
													5.8 - 12.3	Sediment	EB002ISS-150300-20191111	X	X	X
													12.3 - 19.3	Native Material	EB003ISS-300450-20191111	X	X	X
EB078SC	EB078SC-A	11/6/2019	1006173.05	200111.68			19.0	19.3	102%	3.7	-4.8		1.6 - 6.6	Sediment	EB001ISS-000150-20191111	X	X	X
													6.6 - 11.9	Sediment	EB002ISS-150300-20191111	X	X	X
													11.9 - 19.4	Native Material	EB003ISS-300450-20191111	X	X	X
	EB078SC-B		1006175.36	200111.13			19.0	18.8	99%	2.7	-4.5		2.5 - 7.5	Sediment	EB001ISS-000150-20191111	X	X	X
													7.5 - 11.8	Sediment	EB002ISS-150300-20191111	X	X	X
													11.8 - 18.7	Native Material	EB003ISS-300450-20191111	X	X	X
EB079SC	EB079SC-A	11/6/2019	1006211.68	200076.75			19.5	19.6	100%	4.3	-4.1		2.4 - 7.3	Sediment	EB001ISS-000150-20191111	X	X	X
													7.3 - 12.1	Sediment	EB002ISS-150300-20191111	X	X	X
													12.1 - 19.8	Native Material	EB003ISS-300450-20191111	X	X	X
	EB079SC-B	11/7/2019	1006208.55	200077.27			19.0	16.3	86%	3.9	-3.8		2.7 - 7.6	Sediment	EB001ISS-000150-20191111	X	X	X
													7.6 - 9.3	Sediment	EB002ISS-150300-20191111	X	X	X
													9.3 - 16.3	Native Material	EB003ISS-300450-20191111	X	X	X

Notes:
--: indicates no information is applicable or available
1. Actual differentially corrected coordinates and mudlines for accepted subsurface sediment samples
2. Horizontal datum is NAD83 NYLI, State Plane feet
3. Vertical datum is NAVD88. Water depth presented is at the time of sample collection and measured by lead line
4. Chemistry testing includes: D/F, PAHs and alkylated PAHs, PCBs, copper, lead, TOC, and total solids
5. See Appendix B of the TS Work Plan for description of ISS testing
6. Core EB075SC-J was processed assuming a mudline elevation of -5.5 feet NAVD88. This was based on the closest point (porewater station EB075PW), as the elevation of EB075SC-J was not recorded in the field because it was originally not selected for processing. The mudline elevation was revised to -4.9 feet NAVD88 after the core was processed based on tide gauge and bathymetry data
7. Sample was accepted below target recovery of 75% to meet TS PDI FSAP requirements. See Deviation Form 1-7 in Attachment A for additional information
8. See TS PDI FSAP for full description of ISS Composite sample interval selection

Acronyms and abbreviations:
%: percent
D/F: dioxin/furan
ID: identification
ISS: *in situ* stabilization
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988
NYLI: New York Long Island
PAH: polycyclic aromatic hydrocarbon
PCB: polychlorinated biphenyl
TOC: total organic carbon
TS PDI FSAP: Treatability Study Pre-Design Investigation Field Sampling and Analysis Plan
TS Work Plan: Treatability Study Work Plan

Table 5b
Subsurface Sediment and Native Material Geotechnical Sample Collection Summary

			Actual Coordinates[1,2]												Sediment Geotechnical Testing				
Station ID	**Core ID**	**Date Collected**	**Easting (X)**	**Northing (Y)**	**Collection Method**	**Liner Type**	**Penetration (feet)**	**Core Recovery (feet)**	**Core Recovery (%)**	**Water Depth (feet)[3]**	**Mudline Elevation (NAVD88)**	**Sample Interval (feet below mudline)**	**Sample Type**	**Sample ID**	**Hydraulic Conductivity**	**Classification[4]**	**Undisturbed[5]**	**Compaction**	**Archive**
EB071SC	EB071SC-A	11/5/2019	1005857.66	200182.00	Vibracore	Lexan	6.0	5.0	83%	8.7	-10.4	1.5 - 2.0	Sediment	EB071SC-A-040066-20191114	X	--	--	--	--
												3.5 - 4.0	Sediment	EB071SC-A-102127-20191114	X	--	--	--	--
	EB071SC-E	11/13/2019	1005860.19	200184.86	Piston Core	Lexan	6.0	5.8	97%	7.3	-10.1	0.0 - 2.0	Sediment	EB071SC-E-000061-20191115	--	X	X	--	X
												2.0 - 4.0	Sediment	EB071SC-E-061122-20191116	--	X	X	--	X
												4.0 - 5.6	Sediment	EB071SC-E-122171-20191115	--	X	X	--	X
	EB071SC-F	11/13/2019	1005858.15	200189.56	Piston Core	Lexan	6.1	6.1	100%	6.9	-9.6	4.0 - 5.9	Sediment	EB071SC-F-122181-20191116	--	X	X	--	
	EB071SC-B	11/7/2019	1005853.61	200179.96	Vibracore	Lexan	8.2	--	--	9.4	-10.4	6.9 - 8.2	Native Material	EB071SC-B-211250-20191109	--	X	--	--	X
EB072SC	EB072SC-A	11/5/2019	1005896.81	200209.97	Vibracore	Lexan	6.0	5.1	85%	9.9	-11.0	1.5 - 2.0	Sediment	EB072SC-A-040066-20191114	X	--	--	--	--
												3.5 - 4.0	Sediment	EB072SC-A-102127-20191114	X	--	--	--	--
	EB072SC-D	11/11/2019	1005890.84	200211.38	Piston Core	Lexan	5.0	4.4	88%	8.4	-11.0	0.0 - 1.4	Sediment	EB072SC-D-000043-20191115	--	X	X	--	X
												1.4 - 2.8	Sediment	EB072SC-D-043086-20191115	--	X	X	--	X
												2.8 - 4.3	Sediment	EB072SC-D-086130-20191115	--	X	X	--	X
	EB072SC-C	11/8/2019	1005887.95	200209.74	Sonic Drill Rig	--	28.0	--	--	11.7	-10.9	18 - 22	Native Material	EB072SC-C-549671-20191111	--	X	--	--	X
EB073SC	EB073SC-A	11/5/2019	1005939.66	200161.82	Vibracore	Lexan	6.0	5.8	97%	12.6	-11.3	1.5 - 2.0	Sediment	EB073SC-A-040066-20191114	X	--	--	--	--
												3.5 - 4.0	Sediment	EB073SC-A-102127-20191114	X	--	--	--	--
	EB073SC-D	11/11/2019	1005935.44	200158.09	Piston Core	Lexan	7.5	7.4	99%	10.5	-11.8	0.0 - 1.4	Sediment	EB073SC-D-000043-20191115	--	X	X	--	X
												1.4 - 2.8	Sediment	EB073SC-D-043086-20191115	--	X	X	--	X
												2.8 - 4.3	Sediment	EB073SC-D-086130-20191115	--	X	X	--	X
												5.3 - 7.3	Native Material	EB073SC-D-163224-20191115	--	X	X	--	X
	EB073SC-F	11/12/2019	1005944.93	200163.67	Vibracore	Lexan	17	16.4	96%	14.1	-12.1	5.3 - 7.3	Native Material	EB073SC-F-163224-20191115	--	X	--	--	X
	EB1073SC-F											5.3 - 7.3	Native Material	EB1073SC-F-163224-20191115	--	X	--	--	X
EB074SC	EB074SC-A	11/5/2019	1006018.16	200188.90	Vibracore	Lexan	6.0	5.7	95%	10.4	-10.9	3.5 - 4.0	Sediment	EB074SC-A-102127-20191114	X	--	--	--	--
	EB074SC-D	11/14/2019	1006025.05	200190.85	Piston Core	Lexan	4.5	4.5	100%	8.4	-11.2	0.0 - 1.4	Sediment	EB074SC-D-000043-20191116	--	X	X	--	X
												1.4 - 2.8	Sediment	EB074SC-D-043086-20191115	--	X	X	--	X
												2.8 - 4.3	Sediment	EB074SC-D-086130-20191116	--	X	X	--	X
	EB074SC-B	11/7/2019	1006018.58	200192.75	Vibracore	Lexan	8.1	--	--	10.8	-10.8	5.6 - 8.0	Native Material	EB074SC-B-171244-20191111	--	X	--	--	X
EB075SC	EB075SC-A	11/5/2019	1006152.04	200150.22	Vibracore	Lexan	6.5	5.8	89%	6.1	-4.8	1.5 - 2.0	Sediment	EB075SC-A-040066-20191114	X	--	--	--	--
												3.5 - 4.0	Sediment	EB075SC-A-102127-20191114	X	--	--	--	--
	EB075SC-H	11/14/2019	1006157.28	200146.56	Piston Core	Lexan	6.1	6.1	100%	3.3	-5.3	0.0 - 2.0	Sediment	EB075SC-H-000061-20191116	--	X	X	--	X
												2.0 - 4.0	Sediment	EB075SC-H-061122-20191116	--	X	X	--	X
	EB075SC-E	11/11/2019	1006141.97	200150.03	Sonic Drill Rig	--	34.0	--	--	6.5	-5.2	8.0 - 9.5	Sediment	EB075SC-E-244290-20191116	--	X	--	--	X
	EB075SC-D	11/11/2019	1006138.43	200149.75						6.3	-5.3	8.0 - 9.8	Sediment	EB075SC-D-244300-20191111	--	X	--	X	X
	EB075SC-C	11/11/2019	1006140.51	200145.68						10.7	-5.1	22 - 26	Native Material	EB075SC-C-671792-20191111	--	X	--	X	X
EB076SC	EB076SC-A	11/5/2019	1006238.53	200118.56	Vibracore	Lexan	6.0	5.7	95^%	3.8	-2.9	1.5 - 2.0	Sediment	EB076SC-A-040066-20191114	X	--	--	--	--
												3.5 - 4.0	Sediment	EB076SC-A-102127-20191114	X	--	--	--	--
	EB076SC-C	11/11/2019	1006235.06	200120.03	Piston Core	Lexan	7.0	7.0	100%	3.8	-3.1	0.0 - 2.0	Sediment	EB076SC-C-000061-20191116	--	X	X	X	X
												3.0 - 5.0	Sediment	EB076SC-C-091152-20191116	--	X	X	X	X
	EB076SC-F	11/12/2019	1006236.22	200114.01	Sonic Drill Rig	Shelby Tube	2.0	1.5	77%	8.3	-2.9	10 - 11.6	Sediment	EB076SC-F-305353-20191112	--	X	X	X	X
	EB076SC-G	11/12/2019	1006232.65	200116.77			2.0	1.6	81%	7.2	-3.1	16 - 17.6	Native Material	EB076SC-G-488537-20191112	--	X	X	--	X
	EB076SC-F	11/12/2019	1006236.22	200114.01			2.0	1.6	80%	8.3	-2.9	16 - 17.7	Native Material	EB076SC-F-488538-20191112	--	X	X	X	X

Notes:
--: indicates no information is applicable or available
1. Actual differentially corrected coordinates and mudlines for accepted surface sediment samples
2. Horizontal datum is NAD83 NYLI, State Plane feet
3. Vertical datum is NAVD88
4. Classification testing included: grain size, Atterberg limits, bulk density, specific gravity, moisture content, organic content, laboratory soil classification, SPT, vane shear, and penetrometer testing
5. Undisturbed testing included CU triaxial sheer strength and consolidation

Acronyms:
CU: confined undrained
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988
NYLI: New York Long Island
SPT: standard penetration testing
ID: identification

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Conventional Parameters (wt%)						
Organic Content	21	21	100	13	51	24
Moisture (water) content	21	21	100	110	250	200
Total organic carbon	30	30	100	5.3	28	19
Total Solids	50	50	100	21	66	35
Conventional Parameters (unitless)						
Plastic limit	21	21	100	40	100	56
Plasticity index	21	21	100	14	120	93
Specific gravity	21	21	100	2	2.5	2.3
Conventional Parameters (lb/ft3)						
Density (bulk)	21	21	100	67	85	74
Density (dry)	21	21	100	20	40	26
Grain Size (wt%)						
Gravel	21	8	38	0.1	31	5.7
Sand	21	21	100	2.7	66	18
Total fines (Reported, not calculated)	21	21	100	35	97	80
Metals (mg/kg)						
Copper	30	30	100	760	5,900	2,800
Lead	30	30	100	340	2,700	1,400
Volatile Organics (ug/kg)						
1,1,1,2-Tetrachloroethane	4	0	0	--	--	--
1,1,1-Trichloroethane	4	0	0	--	--	--
1,1,2,2-Tetrachloroethane	4	0	0	--	--	--
1,1,2-Trichloroethane	4	0	0	--	--	--
1,1-Dichloroethane	4	2	50	1.2 J	1.7 J	1.5
1,1-Dichloroethene	4	0	0	--	--	--
1,1-Dichloropropene	4	0	0	--	--	--
1,2,3-Trichlorobenzene	4	0	0	--	--	--
1,2,3-Trichloropropane	4	0	0	--	--	--
1,2,4-Trichlorobenzene	4	0	0	--	--	--
1,2,4-Trimethylbenzene	4	2	50	22 J	240 J	130
1,2-Dibromo-3-chloropropane	4	0	0	--	--	--
1,2-Dichlorobenzene	4	4	100	6.8 J	120 J	92
1,2-Dichloroethane	4	0	0	--	--	--
1,2-Dichloroethene, cis-	4	1	25	3 J	3 J	3
1,2-Dichloroethene, trans-	4	0	0	--	--	--
1,2-Dichloropropane	4	0	0	--	--	--
1,3,5-Trichlorobenzene	4	0	0	--	--	--
1,3,5-Trimethylbenzene (Mesitylene)	4	2	50	9 J	100 J	55
1,3-Dichlorobenzene	4	3	75	8.1 J	60 J	30
1,3-Dichloropropane	4	0	0	--	--	--
1,3-Dichloropropene, cis-	4	0	0	--	--	--
1,3-Dichloropropene, trans-	4	0	0	--	--	--
1,4-Dichloro-2-butene, trans-	4	0	0	--	--	--
1,4-Dichlorobenzene	4	4	100	28 J	600 J	260
1,4-Dichlorobutane	4	0	0	--	--	--

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
1,4-Dioxane	4	0	0	--	--	--
2,2-Dichloropropane	4	0	0	--	--	--
2-Chlorotoluene	4	0	0	--	--	--
2-Hexanone (Methyl butyl ketone)	4	0	0	--	--	--
4-Chlorotoluene	4	0	0	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)	4	0	0	--	--	--
Acetone	4	4	100	1,100 J	2,400 J	1,700
Acrylonitrile	4	0	0	--	--	--
Benzene	4	4	100	70 J	190 J	130
Bromobenzene	4	0	0	--	--	--
Bromochloromethane	4	0	0	--	--	--
Bromodichloromethane	4	0	0	--	--	--
Bromoform (Tribromomethane)	4	0	0	--	--	--
Bromomethane (Methyl bromide)	4	1	25	290 J	290 J	290
Carbon disulfide	4	2	50	65 J	180 J	120
Carbon tetrachloride (Tetrachloromethane)	4	0	0	--	--	--
Chlorobenzene	4	4	100	12 J	96 J	53
Chloroethane	4	0	0	--	--	--
Chloroform	4	0	0	--	--	--
Chloromethane	4	1	25	5.7 J	5.7 J	5.7
Cyclohexane	4	3	75	36 J	130 J	77
Cymene, p- (4-Isopropyltoluene)	4	3	75	6.7 J	70 J	43
Dibromochloromethane	4	0	0	--	--	--
Dibromomethane	4	0	0	--	--	--
Dichlorodifluoromethane	4	0	0	--	--	--
Dichloromethane (Methylene chloride)	4	0	0	--	--	--
Diethyl ether	4	0	0	--	--	--
Diisopropylether (Isopropyl Ether)	4	2	50	1.7 J	71 J	36
Ethyl acetate	4	2	50	1,000 J	1,600 J	1,300
Ethyl methacrylate	4	0	0	--	--	--
Ethyl tert-butyl ether (ETBE)	4	0	0	--	--	--
Ethylbenzene	4	4	100	16 J	270 J	91
Ethylene dibromide (1,2-Dibromoethane)	4	0	0	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	4	0	0	--	--	--
Isopropylbenzene (Cumene)	4	4	100	28 J	430 J	210
m,p-Xylene	4	3	75	21 J	280 J	150
Methyl acetate	4	3	75	31 J	7,100	3,900
Methyl ethyl ketone (2-Butanone)	4	1	25	350 J	350 J	350
Methyl tert-butyl ether (MTBE)	4	1	25	1.3 J	1.3 J	1.3
Methylcyclohexane	4	4	100	87 J	440 J	260
n-Butylbenzene	4	4	100	27 J	650 J	270
n-Propylbenzene	4	4	100	19 J	920 J	350
Naphthalene	4	4	100	71 J	1,300 J	450
o-Xylene	4	4	100	34 J	180 J	120
sec-Butylbenzene	4	4	100	12 J	320 J	150
Styrene	4	1	25	130 J	130 J	130

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
tert-Amyl methyl ether (TAME)	4	0	0	--	--	--
tert-Butylbenzene	4	2	50	5.1 J	17 J	11
Tetrachloroethene (PCE)	4	0	0	--	--	--
Tetrahydrofuran	4	0	0	--	--	--
Toluene	4	2	50	7.8 J	20 J	14
Trichloroethene (TCE)	4	0	0	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)	4	0	0	--	--	--
Vinyl acetate	4	0	0	--	--	--
Vinyl chloride	4	1	25	9.9 J	9.9 J	9.9
Polycyclic Aromatic Hydrocarbons (ug/kg)						
1-Methyldibenzothiophene	30	30	100	400	5,800	2,500
1-Methylnaphthalene	30	30	100	280	48,000	18,000
1-Methylphenanthrene	30	30	100	420	39,000	17,000
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	30	30	100	110	40,000	16,000
2,6-Dimethylnaphthalene	30	30	100	780	120,000	40,000
2-Methylanthracene	30	30	100	770	16,000	5,800
2-Methyldibenzothiophene & 3-Methyldibenzothiophene	30	30	100	97	24,000	9,900
2-Methylnaphthalene	30	30	100	820	86,000	29,000
2-Methylphenanthrene	30	30	100	540	55,000	22,000
4-Methyldibenzothiophene	30	30	100	320	27,000	11,000
4-Methylphenanthrene & 9-Methylphenanthrene	30	30	100	1,300	42,000	18,000
Acenaphthene	30	30	100	390	40,000	12,000
Acenaphthylene	30	30	100	1,000	10,000	4,300
Anthracene	30	30	100	1,500	42,000	17,000
Benzo(a)anthracene	30	30	100	5,200	45,000	20,000
Benzo(a)pyrene	30	30	100	5,500	38,000	16,000
Benzo(b)fluoranthene	30	30	100	4,200	24,000	12,000
Benzo(e)pyrene	30	30	100	4,000	23,000	11,000
Benzo(g,h,i)perylene	30	30	100	3,400	21,000	9,300
Benzo(j,k)fluoranthene	30	30	100	4,400	26,000	12,000
Benzonaphthothiophene	30	30	100	2,100	18,000	7,800
Benzothiophene	30	30	100	49 J	2,600	800
Biphenyl (1,1'-Biphenyl)	30	30	100	180	3,500	1,200
Carbazole	30	30	100	170	4,900	1,300
Chrysene	30	30	100	4,000	47,000	21,000
Decalin, cis- & trans-	30	30	100	44 J	25,000	9,600
Dibenzo(a,h)anthracene and Dibenzo(a,c)anthracene	30	30	100	1,000	5,500	2,800
Dibenzothiophene	30	30	100	410	22,000	8,800
Fluoranthene	30	30	100	5,600	76,000	38,000
Fluorene	30	30	100	330	34,000	10,000
Indeno(1,2,3-c,d)pyrene	30	30	100	3,000	18,000	8,500
Naphthalene	30	30	100	1,600	160,000	35,000
Perylene	30	30	100	1,300	7,800	3,600
Phenanthrene	30	30	100	2,600	150,000	55,000
Pyrene	30	30	100	16,000	97,000	48,000
Retene	30	28	93	3,100	56,000	21,000

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Total HPAH (10 of 17) (U = 0)	30	30	100	54,000	390,000	190,000
Total HPAH (10 of 17) (U = MDL)	30	30	100	54,000	390,000	190,000
Total LPAH (7 of 17) (U = 0)	30	30	100	8,300	480,000	160,000
Total LPAH (7 of 17) (U = MDL)	30	30	100	8,300	480,000	160,000
Total PAH (17) (U = 0)	30	30	100	62,000	830,000	350,000
Total PAH (17) (U = MDL)	30	30	100	62,000	830,000	350,000
Alkylated and Polycyclic Aromatic Hydrocarbons (µg/kg)						
Total PAH NC (34) (U = 0)	30	30	100	160,000	2,400,000	1,000,000
Total PAH NC (34) (U = MDL)	30	30	100	160,000	2,400,000	1,000,000
Alkylated Polycyclic Aromatic Hydrocarbons (ug/kg)						
C1-Benzanthracenes/Chrysenes	30	30	100	5,700	50,000	21,000
C1-Benzo(b)thiophene	30	30	100	130	6,600	2,400
C1-Decalins	30	30	100	390	42,000	19,000
C1-Dibenzothiophenes	30	30	100	970	62,000	26,000
C1-Fluoranthenes/Pyrenes	30	30	100	13,000	100,000	43,000
C1-Fluorenes	30	30	100	1,400	45,000	19,000
C1-Naphthalenes	30	30	100	720	84,000	30,000
C1-Phenanthrenes/Anthracenes	30	30	100	3,900	190,000	80,000
C2-Benzanthracenes/Chrysenes	30	30	100	4,700	38,000	17,000
C2-Benzo(b)thiophene	30	30	100	210	14,000	4,800
C2-Decalins	30	30	100	2,700	42,000	22,000
C2-Dibenzothiophenes	30	30	100	8,000	78,000	36,000
C2-Fluorenes	30	30	100	11,000	78,000	39,000
C2-Naphthalenes	30	30	100	1,000	200,000	73,000
C2-Phenanthrenes/Anthracenes	30	30	100	6,000	170,000	79,000
C3-Benzanthracenes/Chrysenes	30	30	100	4,200	27,000	13,000
C3-Benzo(b)thiophene	30	30	100	640	22,000	8,200
C3-Decalins	30	30	100	4,900	33,000	18,000
C3-Dibenzothiophenes	30	30	100	6,900	52,000	26,000
C3-Fluorenes	30	30	100	8,600	66,000	34,000
C3-Naphthalenes	30	30	100	990	220,000	94,000
C3-Phenanthrenes/Anthracenes	30	30	100	7,600	95,000	42,000
C4-Benzanthracenes/Chrysenes	30	30	100	2,200	14,000	6,900
C4-Benzo(b)thiophene	30	30	100	960	16,000	7,200
C4-Decalins	30	30	100	8,200	51,000	30,000
C4-Dibenzothiophenes	30	30	100	3,500	23,000	12,000
C4-Naphthalenes	30	30	100	5,500	130,000	62,000
C4-Phenanthrenes/Anthracenes	30	30	100	6,400	51,000	22,000
Dioxin Furans (ng/kg)						
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	30	28	93	2.4 J	42	24
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	30	30	100	8.8 J	64 J	46
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	30	30	100	7.6 J	100	53
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	30	30	100	20 J	330	170
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	30	30	100	12 J	200	100
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	30	30	100	220	7,000	3,200
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	30	30	100	3,400	50,000	27,000

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Total Tetrachlorodibenzo-p-dioxin (TCDD)	30	30	100	37 J	580 J	360
Total Pentachlorodibenzo-p-dioxin (PeCDD)	30	30	100	120 J	960 J	560
Total Hexachlorodibenzo-p-dioxin (HxCDD)	30	30	100	250 J	2,300	1,400
Total Heptachlorodibenzo-p-dioxin (HpCDD)	30	30	100	480	13,000	6,100
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	30	30	100	23	280	140
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	30	30	100	12 J	480	220
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	30	30	100	89	550	350
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	30	30	100	44	1,200	610
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	30	30	100	34	730	370
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	30	0	0	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	30	30	100	60	370	240
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	30	30	100	270	7,900	3,900
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	30	30	100	19	280	140
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	30	30	100	330	7,500	3,800
Total Tetrachlorodibenzofuran (TCDF)	30	30	100	470 J	7,100	3,300
Total Pentachlorodibenzofuran (PeCDF)	30	30	100	890 J	7,600 J	4,600
Total Hexachlorodibenzofuran (HxCDF)	30	30	100	730 J	8,100 J	4,500
Total Heptachlorodibenzofuran (HpCDF)	30	30	100	670	12,000	6,100
Total Dioxin/Furan TEQ 1998 (Avian) (U = 0)	30	30	100	170 J	1,300	770
Total Dioxin/Furan TEQ 1998 (Fish) (U = 0)	30	30	100	96 J	770	460
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	30	30	100	79 J	740	430
Total Dioxin/Furan TEQ 1998 (Avian) (U = MDL)	30	30	100	170 J	1,300	770
Total Dioxin/Furan TEQ 1998 (Fish) (U = MDL)	30	30	100	96 J	770	460
Total Dioxin/Furan TEQ 2005 (Mammal) (U = MDL)	30	30	100	79 J	740	430
PCB Congeners (ng/kg)						
PCB-001	30	30	100	4,300	600,000 J	210,000
PCB-002	30	30	100	640	77,000	25,000
PCB-003	30	30	100	3,700	410,000 J	140,000
PCB-004	30	30	100	2,400	970,000 J	210,000
PCB-005	30	29	97	320	80,000	21,000
PCB-006	30	30	100	1,400	480,000 J	130,000
PCB-007	30	30	100	520	150,000	41,000
PCB-008	30	30	100	6,200	2,200,000 J	530,000
PCB-009	30	30	100	590	190,000	48,000
PCB-010	30	29	97	220	63,000	16,000
PCB-011	30	30	100	650	35,000	12,000
PCB-012/013	30	30	100	790	180,000	60,000
PCB-014	30	0	0	--	--	--
PCB-015	30	30	100	3,500	900,000 J	220,000
PCB-016	30	30	100	3,000	1,400,000 J	360,000
PCB-017	30	30	100	3,900	1,700,000 J	420,000
PCB-018/030	30	30	100	7,200	3,000,000 J	750,000
PCB-019	30	30	100	640	300,000	67,000
PCB-020/028	30	30	100	8,200	2,800,000 J	760,000
PCB-021/033	30	30	100	4,800	1,800,000 J	450,000
PCB-022	30	30	100	2,400	960,000 J	250,000

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-023	30	15	50	320	3,500	1,400
PCB-024	30	27	90	170	51,000	13,000
PCB-025	30	30	100	500	200,000	70,000
PCB-026/029	30	30	100	1,500	550,000	150,000
PCB-027	30	30	100	390	230,000	58,000
PCB-031	30	30	100	7,300	2,500,000 J	670,000
PCB-032	30	30	100	2,200	850,000 J	220,000
PCB-034	30	25	83	150	9,500	3,400
PCB-035	30	27	90	300	40,000	12,000
PCB-036	30	0	0	--	--	--
PCB-037	30	30	100	2,500	740,000 J	190,000
PCB-038	30	2	7	600	1,000 J	800
PCB-039	30	25	83	520 J	19,000	5,100
PCB-040/071	30	30	100	5,600	1,200,000 J	300,000
PCB-041	30	30	100	770	400,000 J	89,000
PCB-042	30	30	100	3,700	790,000 J	190,000
PCB-043	30	30	100	460	110,000	26,000
PCB-044/047/065	30	30	100	24,000	2,800,000 J	680,000
PCB-045	30	30	100	1,400	580,000 J	130,000
PCB-046	30	30	100	480	210,000	49,000
PCB-048	30	30	100	2,200	740,000 J	180,000
PCB-049/069	30	30	100	14,000	1,800,000 J	430,000
PCB-050/053	30	30	100	1,900	450,000	110,000
PCB-051	30	30	100	190 J	86,000	25,000
PCB-052	30	30	100	50,000	3,400,000 J	880,000
PCB-054	30	24	80	550	7,200	2,200
PCB-055	30	27	90	270 J	42,000	13,000
PCB-056	30	30	100	6,000	990,000 J	240,000
PCB-057	30	24	80	750 J	10,000	3,300
PCB-058	30	10	33	250 J	1,200	630
PCB-059/062/075	30	30	100	890	250,000	60,000
PCB-060	30	30	100	3,800	710,000 J	170,000
PCB-061/070/074/076	30	30	100	48,000	4,000,000 J	1,000,000
PCB-063	30	30	100	620	110,000	26,000
PCB-064	30	30	100	9,000	1,400,000 J	320,000
PCB-066	30	30	100	15,000	1,800,000 J	450,000
PCB-067	30	29	97	300 J	71,000	21,000
PCB-068	30	18	60	660 J	4,300	1,900
PCB-072	30	25	83	530	9,400	3,300
PCB-073	30	6	20	140	1,200	780
PCB-077	30	30	100	1,100	190,000	48,000
PCB-078	30	0	0	--	--	--
PCB-079	30	30	100	650	24,000	6,800
PCB-080	30	2	7	2,800	7,400	5,100
PCB-081	30	23	77	560 J	11,000	3,100
PCB-082	30	30	100	8,900	420,000 J	120,000

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-083	30	30	100	2,900 J	130,000	44,000
PCB-084	30	30	100	25,000	1,000,000 J	290,000
PCB-085/116	30	30	100	15,000	550,000	160,000
PCB-086/087/097/108/119/125	30	30	100	64,000	2,300,000 J	690,000
PCB-088	30	0	0	--	--	--
PCB-089	30	30	100	450 J	50,000	13,000
PCB-090/101/113	30	30	100	110,000	3,500,000 J	1,100,000
PCB-091	30	30	100	11,000	470,000 J	140,000
PCB-092	30	30	100	17,000	650,000 J	200,000
PCB-093/100	30	30	100	390 J	52,000	9,400
PCB-094	30	28	93	350 J	20,000	5,700
PCB-095	30	30	100	77,000	2,900,000 J	870,000
PCB-096	30	30	100	390 J	37,000	8,300
PCB-098	30	0	0	--	--	--
PCB-099	30	30	100	38,000	1,300,000 J	400,000
PCB-102	30	30	100	1,500	110,000	28,000
PCB-103	30	30	100	390	30,000	5,900
PCB-104	30	1	3	290 J	290 J	290
PCB-105	30	30	100	36,000	1,300,000 J	350,000
PCB-106	30	0	0	--	--	--
PCB-107/124	30	30	100	3,100	120,000	34,000
PCB-109	30	30	100	5,000	170,000	51,000
PCB-110	30	30	100	96,000	3,300,000 J	1,000,000
PCB-111	30	0	0	--	--	--
PCB-112	30	2	7	580	1,300	940
PCB-114	30	30	100	1,900	76,000	21,000
PCB-115	30	0	0	--	--	--
PCB-117	30	29	97	1,800	76,000	21,000
PCB-118	30	30	100	85,000	2,500,000 J	770,000
PCB-120	30	7	23	450	4,200	1,500
PCB-121	30	0	0	--	--	--
PCB-122	30	30	100	1,100	45,000	13,000
PCB-123	30	30	100	1,300	48,000	14,000
PCB-126	30	29	97	140 J	8,800	2,900
PCB-127	30	9	30	160 J	3,600	1,800
PCB-128/166	30	30	100	16,000	420,000	150,000
PCB-129/138/163	30	30	100	110,000	2,900,000 J	1,000,000
PCB-130	30	30	100	6,500	200,000	64,000
PCB-131	30	30	100	1,600	49,000	15,000
PCB-132	30	30	100	34,000	990,000 J	320,000
PCB-133	30	29	97	1,000	30,000	11,000
PCB-134	30	30	100	6,400	210,000	67,000
PCB-135/151	30	30	100	29,000	900,000 J	310,000
PCB-136	30	30	100	13,000	380,000 J	130,000
PCB-137	30	29	97	5,300	160,000	50,000
PCB-139/140	30	30	100	1,600 J	52,000	16,000

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-141	30	30	100	20,000	540,000 J	200,000
PCB-142	30	1	3	380 J	380 J	380
PCB-143	30	0	0	--	--	--
PCB-144	30	30	100	4,600	130,000	50,000
PCB-145	30	12	40	210 J	1,300 J	640
PCB-146	30	30	100	11,000	310,000 J	110,000
PCB-147/149	30	30	100	71,000	2,100,000 J	710,000
PCB-148	30	25	83	150 J	7,500	1,000
PCB-150	30	27	90	180	20,000	1,800
PCB-152	30	27	90	110	2,500	880
PCB-153/168	30	30	100	79,000	2,200,000 J	740,000
PCB-154	30	30	100	700 J	110,000	11,000
PCB-155	30	2	7	110 J	1,800 J	980
PCB-156/157	30	30	100	13,000	350,000	120,000
PCB-158	30	30	100	11,000	320,000	100,000
PCB-159	30	5	17	760	9,600	6,100
PCB-160	30	0	0	--	--	--
PCB-161	30	0	0	--	--	--
PCB-162	30	26	87	760	14,000	3,400
PCB-164	30	30	100	6,100	170,000	58,000
PCB-165	30	0	0	--	--	--
PCB-167	30	30	100	3,900 J	100,000	35,000
PCB-169	30	13	43	1,300 J	6,400 J	3,600
PCB-170	30	30	100	22,000	660,000 J	230,000
PCB-171/173	30	30	100	6,800	190,000	69,000
PCB-172	30	30	100	3,500	110,000	37,000
PCB-174	30	30	100	22,000	640,000 J	230,000
PCB-175	30	30	100	1,100	34,000	11,000
PCB-176	30	30	100	3,000	85,000	31,000
PCB-177	30	30	100	11,000	340,000 J	120,000
PCB-178	30	30	100	4,200	130,000	43,000
PCB-179	30	30	100	8,700	270,000	87,000
PCB-180/193	30	30	100	47,000	1,400,000 J	480,000
PCB-181	30	25	83	490 J	5,900	2,100
PCB-182	30	20	67	320	3,700	1,300
PCB-183	30	30	100	14,000	420,000 J	140,000
PCB-184	30	0	0	--	--	--
PCB-185	30	30	100	2,900	65,000	23,000
PCB-186	30	0	0	--	--	--
PCB-187	30	30	100	26,000	810,000 J	250,000
PCB-188	30	8	27	83 J	5,600	910
PCB-189	30	30	100	750	22,000	7,500
PCB-190	30	30	100	3,800	110,000	39,000
PCB-191	30	30	100	810	26,000	9,000
PCB-192	30	0	0	--	--	--
PCB-194	30	30	100	13,000	360,000 J	110,000

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-195	30	30	100	4,400	130,000	42,000
PCB-196	30	30	100	7,200	200,000	60,000
PCB-197	30	30	100	440	14,000	4,100
PCB-198/199	30	30	100	17,000	350,000	120,000
PCB-200	30	30	100	2,100	46,000	15,000
PCB-201	30	30	100	2,700	56,000	19,000
PCB-202	30	30	100	4,600	60,000	26,000
PCB-203	30	30	100	9,800	190,000	68,000
PCB-204	30	0	0	--	--	--
PCB-205	30	29	97	740	28,000	5,600
PCB-206	30	30	100	13,000	180,000	70,000
PCB-207	30	30	100	1,800	16,000	7,600
PCB-208	30	30	100	4,600	82,000	25,000
PCB-209	30	30	100	7,800	330,000 J	67,000
Total Monochlorobiphenyl homologs (U = MDL)	30	30	100	9,700	1,100,000 J	380,000
Total Dichlorobiphenyl homologs (U = MDL)	30	30	100	17,000	5,200,000 J	1,300,000
Total Trichlorobiphenyl homologs (U = MDL)	30	30	100	46,000	17,000,000 J	4,400,000
Total Tetrachlorobiphenyl homologs (U = MDL)	30	30	100	190,000 J	22,000,000 J	5,500,000
Total Pentachlorobiphenyl homologs (U = MDL)	30	30	100	600,000 J	21,000,000 J	6,300,000
Total Hexachlorobiphenyl homologs (U = MDL)	30	30	100	450,000 J	12,000,000 J	4,300,000
Total Heptachlorobiphenyl homologs (U = MDL)	30	30	100	180,000	5,000,000 J	1,800,000
Total Octachlorobiphenyl homologs (U = MDL)	30	30	100	62,000	1,400,000 J	470,000
Total Nonachlorobiphenyl homologs (U = MDL)	30	30	100	20,000	270,000	100,000
Total PCB Congener (U = MDL)	30	30	100	1,800,000 J	83,000,000 J	25,000,000
Total PCB Congener TEQ 1998 (Avian) (U = MDL)	30	30	100	97	11,000 J	3,000
Total PCB Congener TEQ 1998 (Fish) (U = MDL)	30	30	100	1.7 J	69 J	26
Total PCB Congener TEQ 2005 (Mammal) (U = MDL)	30	30	100	24 J	1,100 J	380
Total Monochlorobiphenyl homologs (U = 0)	30	30	100	9,700	1,100,000 J	380,000
Total Dichlorobiphenyl homologs (U = 0)	30	30	100	17,000	5,200,000 J	1,300,000
Total Trichlorobiphenyl homologs (U = 0)	30	30	100	44,000	17,000,000 J	4,400,000
Total Tetrachlorobiphenyl homologs (U = 0)	30	30	100	190,000 J	22,000,000 J	5,500,000
Total Pentachlorobiphenyl homologs (U = 0)	30	30	100	600,000 J	21,000,000 J	6,300,000
Total Hexachlorobiphenyl homologs (U = 0)	30	30	100	450,000 J	12,000,000 J	4,300,000
Total Heptachlorobiphenyl homologs (U = 0)	30	30	100	180,000	5,000,000 J	1,800,000
Total Octachlorobiphenyl homologs (U = 0)	30	30	100	62,000	1,400,000 J	470,000
Total Nonachlorobiphenyl homologs (U = 0)	30	30	100	20,000	270,000	100,000

Table 5c
Subsurface Sediment Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Total PCB Congener (U = 0)	30	30	100	1,800,000 J	83,000,000 J	25,000,000
Total PCB Congener TEQ 1998 (Avian) (U = 0)	30	30	100	58	11,000 J	2,900
Total PCB Congener TEQ 1998 (Fish) (U = 0)	30	30	100	0.81	69 J	26
Total PCB Congener TEQ 2005 (Mammal) (U = 0)	30	30	100	4.4	1,100 J	370

Notes:

Percent detected results are rounded to the nearest whole number. Minimum, maximum, and arithmetic average results are rounded to two significant figures, except where trailing zeros are not shown, resulting in one significant figure

--: indicates no information is applicable or available

J: estimated value

Acronyms:

µg/kg: micrograms per kilogram

Max: maximum

mg/kg: milligrams per kilogram

Min: minimum

ng/kg: nanograms per kilogram

PCB: polychlorinated biphenyl

wt%: weight percent

Table 5d
Native Material Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Conventional Parameters (wt%)						
Organic Content	8	8	100	0.1	4.6	1.4
Moisture (water) content	8	8	100	11	28	17
Total organic carbon	1	1	100	0.54	0.54	0.54
Total Solids	1	1	100	88	88	88
Conventional Parameters (unitless)						
Plastic limit	8	1	13	19	19	19
Plasticity index	8	1	13	4	4	4
Specific gravity	8	8	100	2.7	2.8	2.8
Conventional Parameters (lb/ft3)						
Density (bulk)	8	8	100	106	130	120
Density (dry)	8	8	100	89	110	103
Grain Size (wt%)						
Gravel	8	4	50	0.1	16	6.2
Sand	8	8	100	0.6	94	65
Total fines (Reported, not calculated)	8	8	100	5.8	99	32
Metals (mg/kg)						
Copper	1	1	100	13	13	13
Lead	1	1	100	6.4	6.4	6.4
Polycyclic Aromatic Hydrocarbons (ug/kg)						
1-Methyldibenzothiophene	1	1	100	1.9	1.9	1.9
1-Methylnaphthalene	1	1	100	14	14	14
1-Methylphenanthrene	1	1	100	11	11	11
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	1	1	100	7.1	7.1	7.1
2,6-Dimethylnaphthalene	1	1	100	23	23	23
2-Methylanthracene	1	1	100	4.5	4.5	4.5
2-Methyldibenzothiophene & 3-Methyldibenzothiophene	1	1	100	5.9	5.9	5.9
2-Methylnaphthalene	1	1	100	23	23	23
2-Methylphenanthrene	1	1	100	12	12	12
4-Methyldibenzothiophene	1	1	100	7.7	7.7	7.7
4-Methylphenanthrene & 9-Methylphenanthrene	1	1	100	11	11	11
Acenaphthene	1	1	100	11	11	11
Acenaphthylene	1	1	100	3	3	3
Anthracene	1	1	100	16	16	16
Benzo(a)anthracene	1	1	100	17	17	17
Benzo(a)pyrene	1	1	100	13	13	13
Benzo(b)fluoranthene	1	1	100	9.3	9.3	9.3
Benzo(e)pyrene	1	1	100	8	8	8
Benzo(g,h,i)perylene	1	1	100	6.9	6.9	6.9
Benzo(j,k)fluoranthene	1	1	100	10	10	10
Benzonaphthothiophene	1	1	100	6.4 J	6.4 J	6.4
Benzothiophene	1	1	100	2	2	2
Biphenyl (1,1'-Biphenyl)	1	1	100	1.7	1.7	1.7
Carbazole	1	1	100	0.95 J	0.95 J	0.95
Chrysene	1	1	100	17	17	17
Decalin, cis- & trans-	1	1	100	3.1 J	3.1 J	3.1
Dibenzo(a,h)anthracene and Dibenzo(a,c)anthracene	1	1	100	2.3	2.3	2.3
Dibenzothiophene	1	1	100	6.1	6.1	6.1
Fluoranthene	1	1	100	31	31	31
Fluorene	1	1	100	8.6	8.6	8.6

Table 5d
Native Material Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Indeno(1,2,3-c,d)pyrene	1	1	100	6.8	6.8	6.8
Naphthalene	1	1	100	52	52	52
Perylene	1	1	100	5.7	5.7	5.7
Phenanthrene	1	1	100	43	43	43
Pyrene	1	1	100	40	40	40
Retene	1	1	100	21	21	21
Total HPAH (10 of 17) (U = 0)	1	1	100	150	150	150
Total HPAH (10 of 17) (U = MDL)	1	1	100	150	150	150
Total LPAH (7 of 17) (U = 0)	1	1	100	160	160	160
Total LPAH (7 of 17) (U = MDL)	1	1	100	160	160	160
Total PAH (17) (U = 0)	1	1	100	310	310	310
Total PAH (17) (U = MDL)	1	1	100	310	310	310
Alkylated and Polycyclic Aromatic Hydrocarbons (µg/kg)						
Total PAH NC (34) (U = 0)	1	1	100	790	790	790
Total PAH NC (34) (U = MDL)	1	1	100	790	790	790
Alkylated Polycyclic Aromatic Hydrocarbons (ug/kg)						
C1-Benzanthracenes/Chrysenes	1	1	100	17	17	17
C1-Benzo(b)thiophene	1	1	100	1.9	1.9	1.9
C1-Decalins	1	1	100	6.9	6.9	6.9
C1-Dibenzothiophenes	1	1	100	17	17	17
C1-Fluoranthenes/Pyrenes	1	1	100	35	35	35
C1-Fluorenes	1	1	100	12	12	12
C1-Naphthalenes	1	1	100	23	23	23
C1-Phenanthrenes/Anthracenes	1	1	100	49	49	49
C2-Benzanthracenes/Chrysenes	1	1	100	16	16	16
C2-Benzo(b)thiophene	1	1	100	2.8	2.8	2.8
C2-Decalins	1	1	100	11	11	11
C2-Dibenzothiophenes	1	1	100	25	25	25
C2-Fluorenes	1	1	100	28	28	28
C2-Naphthalenes	1	1	100	44	44	44
C2-Phenanthrenes/Anthracenes	1	1	100	71	71	71
C3-Benzanthracenes/Chrysenes	1	1	100	12	12	12
C3-Benzo(b)thiophene	1	1	100	4.8	4.8	4.8
C3-Decalins	1	1	100	9.4	9.4	9.4
C3-Dibenzothiophenes	1	1	100	18	18	18
C3-Fluorenes	1	1	100	25	25	25
C3-Naphthalenes	1	1	100	53	53	53
C3-Phenanthrenes/Anthracenes	1	1	100	30	30	30
C4-Benzanthracenes/Chrysenes	1	1	100	8	8	8
C4-Benzo(b)thiophene	1	1	100	4.9	4.9	4.9
C4-Decalins	1	1	100	19	19	19
C4-Dibenzothiophenes	1	1	100	14	14	14
C4-Naphthalenes	1	1	100	39	39	39
C4-Phenanthrenes/Anthracenes	1	1	100	19	19	19
Dioxin Furans (ng/kg)						
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1	0	0	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1	0	0	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1	0	0	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1	0	0	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1	0	0	--	--	--

Table 5d
Native Material Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1	1	100	7 J	7 J	7
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1	1	100	59 J	59 J	59
Total Tetrachlorodibenzo-p-dioxin (TCDD)	1	0	0	--	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)	1	0	0	--	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)	1	1	100	2.6	2.6	2.6
Total Heptachlorodibenzo-p-dioxin (HpCDD)	1	1	100	13	13	13
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1	0	0	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1	0	0	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1	0	0	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1	0	0	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1	0	0	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1	0	0	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1	0	0	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1	1	100	4 J	4 J	4
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1	1	100	1 J	1 J	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1	1	100	5.9 J	5.9 J	5.9
Total Tetrachlorodibenzofuran (TCDF)	1	0	0	--	--	--
Total Pentachlorodibenzofuran (PeCDF)	1	0	0	--	--	--
Total Hexachlorodibenzofuran (HxCDF)	1	0	0	--	--	--
Total Heptachlorodibenzofuran (HpCDF)	1	1	100	7.2 J	7.2 J	7.2
Total Dioxin/Furan TEQ 1998 (Avian) (U = 0)	1	1	100	0.063 J	0.063 J	0.063
Total Dioxin/Furan TEQ 1998 (Fish) (U = 0)	1	1	100	0.063 J	0.063 J	0.063
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	1	1	100	0.14 J	0.14 J	0.14
Total Dioxin/Furan TEQ 1998 (Avian) (U = MDL)	1	1	100	6.5 J	6.5 J	6.5
Total Dioxin/Furan TEQ 1998 (Fish) (U = MDL)	1	1	100	5.1 J	5.1 J	5.1
Total Dioxin/Furan TEQ 2005 (Mammal) (U = MDL)	1	1	100	4.8 J	4.8 J	4.8
PCB Congeners (ng/kg)						
PCB-001	1	1	100	74 J	74 J	74
PCB-002	1	1	100	21 J	21 J	21
PCB-003	1	1	100	78	78	78
PCB-004	1	1	100	60	60	60
PCB-005	1	0	0	--	--	--
PCB-006	1	0	0	--	--	--
PCB-007	1	0	0	--	--	--
PCB-008	1	1	100	140	140	140
PCB-009	1	0	0	--	--	--
PCB-010	1	0	0	--	--	--
PCB-011	1	0	0	--	--	--
PCB-012/013	1	0	0	--	--	--
PCB-014	1	0	0	--	--	--
PCB-015	1	1	100	100	100	100
PCB-016	1	0	0	--	--	--
PCB-017	1	0	0	--	--	--
PCB-018/030	1	1	100	130 J	130 J	130
PCB-019	1	0	0	--	--	--
PCB-020/028	1	1	100	300	300	300
PCB-021/033	1	1	100	170	170	170
PCB-022	1	0	0	--	--	--
PCB-023	1	0	0	--	--	--
PCB-024	1	0	0	--	--	--

Table 5d
Native Material Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-025	1	0	0	--	--	--
PCB-026/029	1	0	0	--	--	--
PCB-027	1	0	0	--	--	--
PCB-031	1	1	100	230	230	230
PCB-032	1	0	0	--	--	--
PCB-034	1	0	0	--	--	--
PCB-035	1	0	0	--	--	--
PCB-036	1	0	0	--	--	--
PCB-037	1	0	0	--	--	--
PCB-038	1	0	0	--	--	--
PCB-039	1	0	0	--	--	--
PCB-040/071	1	1	100	68 J	68 J	68
PCB-041	1	0	0	--	--	--
PCB-042	1	1	100	43 J	43 J	43
PCB-043	1	0	0	--	--	--
PCB-044/047/065	1	1	100	200	200	200
PCB-045	1	0	0	--	--	--
PCB-046	1	0	0	--	--	--
PCB-048	1	1	100	35 J	35 J	35
PCB-049/069	1	1	100	130	130	130
PCB-050/053	1	1	100	28 J	28 J	28
PCB-051	1	0	0	--	--	--
PCB-052	1	1	100	310	310	310
PCB-054	1	0	0	--	--	--
PCB-055	1	0	0	--	--	--
PCB-056	1	1	100	110	110	110
PCB-057	1	0	0	--	--	--
PCB-058	1	0	0	--	--	--
PCB-059/062/075	1	0	0	--	--	--
PCB-060	1	1	100	80	80	80
PCB-061/070/074/076	1	1	100	480	480	480
PCB-063	1	0	0	--	--	--
PCB-064	1	1	100	92	92	92
PCB-066	1	1	100	230	230	230
PCB-067	1	0	0	--	--	--
PCB-068	1	0	0	--	--	--
PCB-072	1	0	0	--	--	--
PCB-073	1	0	0	--	--	--
PCB-077	1	1	100	41 J	41 J	41
PCB-078	1	0	0	--	--	--
PCB-079	1	0	0	--	--	--
PCB-080	1	0	0	--	--	--
PCB-081	1	0	0	--	--	--
PCB-082	1	0	0	--	--	--
PCB-083	1	0	0	--	--	--
PCB-084	1	1	100	120 J	120 J	120
PCB-085/116	1	1	100	70 J	70 J	70
PCB-086/087/097/108/119/125	1	1	100	370	370	370
PCB-088	1	0	0	--	--	--
PCB-089	1	0	0	--	--	--

Table 5d
Native Material Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-090/101/113	1	1	100	500	500	500
PCB-091	1	1	100	49 J	49 J	49
PCB-092	1	1	100	80 J	80 J	80
PCB-093/100	1	0	0	--	--	--
PCB-094	1	0	0	--	--	--
PCB-095	1	1	100	390	390	390
PCB-096	1	0	0	--	--	--
PCB-098	1	0	0	--	--	--
PCB-099	1	1	100	230	230	230
PCB-102	1	0	0	--	--	--
PCB-103	1	0	0	--	--	--
PCB-104	1	0	0	--	--	--
PCB-105	1	1	100	250 J	250 J	250
PCB-106	1	0	0	--	--	--
PCB-107/124	1	0	0	--	--	--
PCB-109	1	0	0	--	--	--
PCB-110	1	1	100	550	550	550
PCB-111	1	0	0	--	--	--
PCB-112	1	0	0	--	--	--
PCB-114	1	0	0	--	--	--
PCB-115	1	0	0	--	--	--
PCB-117	1	0	0	--	--	--
PCB-118	1	1	100	570	570	570
PCB-120	1	0	0	--	--	--
PCB-121	1	0	0	--	--	--
PCB-122	1	0	0	--	--	--
PCB-123	1	0	0	--	--	--
PCB-126	1	0	0	--	--	--
PCB-127	1	0	0	--	--	--
PCB-128/166	1	1	100	100	100	100
PCB-129/138/163	1	1	100	700	700	700
PCB-130	1	0	0	--	--	--
PCB-131	1	0	0	--	--	--
PCB-132	1	1	100	180 J	180 J	180
PCB-133	1	0	0	--	--	--
PCB-134	1	1	100	47 J	47 J	47
PCB-135/151	1	1	100	170	170	170
PCB-136	1	1	100	67 J	67 J	67
PCB-137	1	0	0	--	--	--
PCB-139/140	1	0	0	--	--	--
PCB-141	1	1	100	120	120	120
PCB-142	1	0	0	--	--	--
PCB-143	1	0	0	--	--	--
PCB-144	1	1	100	30 J	30 J	30
PCB-145	1	0	0	--	--	--
PCB-146	1	1	100	50 J	50 J	50
PCB-147/149	1	1	100	420	420	420
PCB-148	1	0	0	--	--	--
PCB-150	1	0	0	--	--	--
PCB-152	1	0	0	--	--	--

Table 5d
Native Material Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-153/168	1	1	100	500	500	500
PCB-154	1	0	0	--	--	--
PCB-155	1	0	0	--	--	--
PCB-156/157	1	1	100	100	100	100
PCB-158	1	1	100	77 J	77 J	77
PCB-159	1	0	0	--	--	--
PCB-160	1	0	0	--	--	--
PCB-161	1	0	0	--	--	--
PCB-162	1	0	0	--	--	--
PCB-164	1	0	0	--	--	--
PCB-165	1	0	0	--	--	--
PCB-167	1	1	100	47 J	47 J	47
PCB-169	1	0	0	--	--	--
PCB-170	1	1	100	150 J	150 J	150
PCB-171/173	1	0	0	--	--	--
PCB-172	1	0	0	--	--	--
PCB-174	1	1	100	130	130	130
PCB-175	1	0	0	--	--	--
PCB-176	1	0	0	--	--	--
PCB-177	1	1	100	64 J	64 J	64
PCB-178	1	0	0	--	--	--
PCB-179	1	1	100	63 J	63 J	63
PCB-180/193	1	1	100	310	310	310
PCB-181	1	0	0	--	--	--
PCB-182	1	0	0	--	--	--
PCB-183	1	1	100	67	67	67
PCB-184	1	0	0	--	--	--
PCB-185	1	0	0	--	--	--
PCB-186	1	0	0	--	--	--
PCB-187	1	1	100	180	180	180
PCB-188	1	0	0	--	--	--
PCB-189	1	0	0	--	--	--
PCB-190	1	0	0	--	--	--
PCB-191	1	0	0	--	--	--
PCB-192	1	0	0	--	--	--
PCB-194	1	0	0	--	--	--
PCB-195	1	0	0	--	--	--
PCB-196	1	0	0	--	--	--
PCB-197	1	0	0	--	--	--
PCB-198/199	1	1	100	140	140	140
PCB-200	1	0	0	--	--	--
PCB-201	1	0	0	--	--	--
PCB-202	1	0	0	--	--	--
PCB-203	1	1	100	70	70	70
PCB-204	1	0	0	--	--	--
PCB-205	1	0	0	--	--	--
PCB-206	1	1	100	120 J	120 J	120
PCB-207	1	0	0	--	--	--
PCB-208	1	1	100	65 J	65 J	65
PCB-209	1	1	100	180	180	180

Table 5d
Native Material Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Total Monochlorobiphenyl homologs (U = MDL)	1	1	100	170 J	170 J	170
Total Dichlorobiphenyl homologs (U = MDL)	1	1	100	880	880	880
Total Trichlorobiphenyl homologs (U = MDL)	1	1	100	2,100 J	2,100 J	2,100
Total Tetrachlorobiphenyl homologs (U = MDL)	1	1	100	2,200 J	2,200 J	2,200
Total Pentachlorobiphenyl homologs (U = MDL)	1	1	100	3,900 J	3,900 J	3,900
Total Hexachlorobiphenyl homologs (U = MDL)	1	1	100	3,100 J	3,100 J	3,100
Total Heptachlorobiphenyl homologs (U = MDL)	1	1	100	1,400 J	1,400 J	1,400
Total Octachlorobiphenyl homologs (U = MDL)	1	1	100	840	840	840
Total Nonachlorobiphenyl homologs (U = MDL)	1	1	100	220 J	220 J	220
Total PCB Congener (U = MDL)	1	1	100	15,000 J	15,000 J	15,000
Total PCB Congener TEQ 1998 (Avian) (U = MDL)	1	1	100	6.7 J	6.7 J	6.7
Total PCB Congener TEQ 1998 (Fish) (U = MDL)	1	1	100	0.13 J	0.13 J	0.13
Total PCB Congener TEQ 2005 (Mammal) (U = MDL)	1	1	100	3.6 J	3.6 J	3.6
Total Monochlorobiphenyl homologs (U = 0)	1	1	100	170 J	170 J	170
Total Dichlorobiphenyl homologs (U = 0)	1	1	100	300	300	300
Total Trichlorobiphenyl homologs (U = 0)	1	1	100	820 J	820 J	820
Total Tetrachlorobiphenyl homologs (U = 0)	1	1	100	1,800 J	1,800 J	1,800
Total Pentachlorobiphenyl homologs (U = 0)	1	1	100	3,200 J	3,200 J	3,200
Total Hexachlorobiphenyl homologs (U = 0)	1	1	100	2,600 J	2,600 J	2,600
Total Heptachlorobiphenyl homologs (U = 0)	1	1	100	960 J	960 J	960
Total Octachlorobiphenyl homologs (U = 0)	1	1	100	210	210	210
Total Nonachlorobiphenyl homologs (U = 0)	1	1	100	180 J	180 J	180
Total PCB Congener (U = 0)	1	1	100	10,000 J	10,000 J	10,000
Total PCB Congener TEQ 1998 (Avian) (U = 0)	1	1	100	2.1 J	2.1 J	2.1
Total PCB Congener TEQ 1998 (Fish) (U = 0)	1	1	100	0.0089 J	0.0089 J	0.0089
Total PCB Congener TEQ 2005 (Mammal) (U = 0)	1	1	100	0.033 J	0.033 J	0.033

Notes:
Percent detected results are rounded to the nearest whole number. Minimum, maximum, and arithmetic average results are rounded to two significant figures, except where trailing zeros are not shown, resulting in one significant figure
--: indicates no information is applicable or available
J: estimated value

Acronyms:
µg/kg: micrograms per kilogram
Max: maximum
mg/kg: milligrams per kilogram
Min: minimum
ng/kg: nanograms per kilogram
PCB: polychlorinated biphenyl
wt%: weight percent

Table 5e
Subsurface Sediment Sample Visual Observation and Shake Test Summary

		Core Processing Visual Observations					Shake Testing Results		
Station ID	Core ID	Interval (feet below mudline)	Sheen Color	Sheen Distribution	Amount	Percent	Interval (feet below mudline)	Sheen Color	NAPL Observation
EB071SC	EB071SC-B	0.0 - 6.9	Rainbow	Florets	Trace	<2%	2.3	Rainbow	None
							6.9	Rainbow	None
	EB071SC-C	6.3 - 6.7	Silvery	Covered	Trace	<2%	--	--	None
EB072SC	EB072SC-B	1.1 - 5.2	Silvery	Covered	Trace	<2%	2.0	Silvery	None
							4.9	Silvery	None
	EB072SC-C	2.0 - 2.4	Silvery	Florets	Trace	<2%	--	--	--
		2.4 - 2.9	Rainbow	Covered	Moderate	15 to 40%	--	--	--
EB073SC	EB073SC-B	0.0 - 1.7	Silvery	Covered	Trace	<2%	1.6	Silvery	None
EB074SC	EB074SC-B	0.0 - 5.0	Rainbow	Florets	Slight	2 to 15%	1.0	Rainbow	None
							4.9	Rainbow	None
EB075SC	EB075SC-B	0.0 - 1.0	Silvery	Covered	Slight	2 to 15%	0.5	Silvery	None
		1.0 - 9.2	Rainbow	Florets	Trace	<2%	4.9	Silvery	None
		9.2 - 11.1	Silvery	Covered	Slight	2 to 15%	9.5	Silvery	None
	EB075SC-J	0.0 - 1.7	Silvery	Covered	Slight	2 to 15%	0.3	Silvery	None
		1.7 - 9.1	Rainbow	Florets	Slight	2 to 15%	3.0	Rainbow	None
							5.4	Rainbow	None
							8.9	Rainbow	None
	EB075SC-K	5.2 - 10.0	Rainbow	Florets	Slight	2 to 15%	5.4	Rainbow	None
							8.9	Rainbow	None
EB076SC	EB076SC-B	0.0 - 2.5	Rainbow	Covered	Slight	2 to 15%	2.3	Rainbow	None
	EB076SC-B	2.5 - 9.8	Rainbow	Florets	Trace	<2%	4.3	Rainbow	None
	EB076SC-B	9.8 - 14.5	Silvery	Covered	Trace	<2%	12.1	Silvery	None
	EB076SC-E	0.0 - 0.1	Rainbow	Covered	Moderate	15 to 40%	--	--	--
	EB076SC-E	2.0 - 2.6	Rainbow	Covered	Moderate	15 to 40%	--	--	--
	EB076SC-E	4.0 - 5.0	Rainbow	Covered	Moderate	15 to 40%	--	--	--
	EB076SC-E	5.0 - 5.9	Rainbow	Florets	Slight	2 to 15%	--	--	--
	EB076SC-E	6.0 - 6.4	Silvery	Covered	Moderate	15 to 40%	--	--	--
	EB076SC-E	10.0 - 10.6	Rainbow	Covered	Moderate to Heavy	40 to 70%	--	--	--
	EB076SC-I	0.0 - 14.7	Silvery	Covered	Trace	<2%	0.3	Silvery	None
							9.2	Silvery	None
							12.1	Silvery	None
EB077SC	EB077SC-A	0.0 - 11.5	Rainbow	Florets	Trace	<2%	4.3	Rainbow	None
							8.2	Rainbow	Blebs
	EB077SC-B	0.0 - 10.7	Rainbow	Covered	Slight	2 to 15%	1.3	Silvery	None
							5.6	Rainbow	None
							8.2	Rainbow	Blebs
		10.7 - 12.3	Silvery	Covered	Trace	<2%	11.6	Silvery	None
EB078SC	EB078SC-A	0.0 - 11.9	Rainbow	Florets	Trace	<2%	1.6	Silvery	None
							8.2	Silvery	None
	EB078SC-B	0.0 - 9.8	Rainbow	Florets	Trace	<2%	0.3	Silvery	None
							6.2	Silvery	None
		9.8 - 11.2	Rainbow	Covered	Slight	2 to 15%	10.2	Rainbow	None
							10.8	Rainbow	Blebs
		11.2 - 11.8	Rainbow	Florets	Trace	<2%	11.5	Silvery	None
EB079SC	EB079SC-A	0.0 - 6.9	Rainbow	Florets	Trace	<2%	1.0	Silvery	None
							6.2	Silvery	None
		6.9 - 12.1	Silvery	Covered	Trace	<2%	11.8	Silvery	None
	EB079SC-B	0.0 - 7.5	Rainbow	Florets	Trace	<2%	1.6	Silvery	None
							6.2	Silvery	None
		7.5 - 9.3	Silvery	Covered	Trace	<2%	8.9	Silvery	None
							10.2	Silvery	None

Notes:
--: indicates no information is applicable or available
1. This table summarizes positive visual observations only. No sheen was observed unless noted above. See Sediment Core Logs in Attachment B2-5 for more information
2. See Table 5a for Station ID and Core ID specific data

Acronyms and abbreviations:
%: percent
ID: identification

Table 6a
Porewater Sample Collection Summary

Station ID	Sample Grab ID	Date Collected	Actual Coordinates[1,2]		Collection Method	Sample ID	Sample Interval (feet below mudline)	Porewater Testing		
			Easting (X)	Northing (Y)				PAHs	PCBs	Metals[4]
EB071PW	EB071PW-A	12/19/2019	1005860.66	200174.16	SPME	EB071PW-A-030-060-20191219	1.0 - 2.0	X	X	--
	EB071PW-B		1005860.66	200174.16	PEEP	EB071PW-B-030-060-20191219		--	--	X
EB072PW	EB072PW-A	12/19/2019	1005889.93	200211.36	SPME	EB072PW-A-030-060-20191219	1.0 - 2.0	X	X	--
	EB072PW-B		1005889.93	200211.36	PEEP	EB072PW-B-030-060-20191219		--	--	X
EB073PW	EB073PW-A	12/19/2019	1005938.56	200156.29	SPME	EB072PW-A-030-060-20191219	1.0 - 2.0	X	X	--
	EB073PW-B		1005938.56	200156.29	PEEP	EB073PW-B-030-060-20191219		--	--	X
EB074PW	EB074PW-A	12/19/2019	1006024.18	200190.23	SPME	EB074PW-A-030-060-20191219	1.0 - 2.0	X	X	--
	EB074PW-B		1006024.18	200190.23	PEEP	EB074PW-B-030-060-20191219		--	--	X
EB075PW	EB075PW-A	12/19/2019	1006152.37	200143.29	SPME	EB075PW-A-064-094-20191219	2.1 - 3.1	X	X	--
	EB075PW-B	11/7/2019	1006148.01	200150.68	Temporary Well	EB075PW-B-20191107	2.0 - 3.0	--	--	X
EB076PW	EB076PW-A	12/19/2019	1006228.87	200111.00	SPME	EB076PW-A-121-151-20191219	4.0 - 5.0	X	X	--
	EB076PW-B	11/9/2019	1006231.58	200112.36	Temporary Well	EB076PW-B-20191109	4.2 - 5.2	--	--	X

Notes:
--: indicates no information that is applicable or available
1. Actual differentially corrected coordinates and mudlines for accepted porewater samples
2. Horizontal datum is NAD83 NYLI, State Plane feet
3. Vertical datum is NAVD88. Water depth presented is at the time of sample collection and measured by lead line
4. Metals testing includes dissolved lead and copper

Acronyms:
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988
NYLI: New York Long Island
PAH: polycyclic aromatic hydrocarbon
PCB: polychlorinated biphenyl
PEEP: peepers
SPME: solid-phase microextraction
ID: identification

Table 6b
Porewater Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Metals, Dissolved (peeper) (µg/L)						
Copper	4	0	0	--	--	--
Lead	4	0	0	--	--	--
Metals, Dissolved (porewater) (µg/L)						
Copper	2	1	50	20	20	20
Lead	2	1	50	8.6 J	8.6 J	8.6
Polycyclic Aromatic Hydrocarbons (SPME) (µg/L)						
1-Methyldibenzothiophene	6	6	100	0.0077 J	0.064	0.026
1-Methylnaphthalene	6	6	100	0.035 J	3	0.72
1-Methylphenanthrene	6	5	83	0.0055 J	0.2	0.086
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	6	6	100	0.026	0.48	0.19
2,6-Dimethylnaphthalene	6	6	100	0.014 J	2.1	0.62
2-Methylanthracene	6	6	100	0.0061 J	0.062	0.025
2-Methyldibenzothiophene & 3-Methyldibenzothiophene	6	6	100	0.0035 J	0.19	0.066
2-Methylnaphthalene	6	4	67	0.053 J	1.9 J	0.64
2-Methylphenanthrene	6	3	50	0.0074 J	0.16	0.098
4-Methyldibenzothiophene	6	6	100	0.012 J	0.27	0.098
4-Methylphenanthrene & 9-Methylphenanthrene	6	6	100	0.016 J	0.31	0.12
Acenaphthene	6	6	100	0.083 J	2.1 J	0.71
Acenaphthylene	6	2	33	0.44 J	0.59	0.51
Anthracene	6	6	100	0.036 J	0.38	0.16
Benzo(a)anthracene	6	6	100	0.0041 J	0.024 J	0.012
Benzo(a)pyrene	6	6	100	0.00092 J	0.0034	0.002
Benzo(b)fluoranthene	6	6	100	0.00099 J	0.0036 J	0.002
Benzo(e)pyrene	6	6	100	0.001 J	0.0037	0.0021
Benzo(g,h,i)perylene	6	6	100	0.00022 J	0.00087 J	0.00047
Benzo(j,k)fluoranthene	6	6	100	0.00051 J	0.0026 J	0.0014
Benzonaphthothiophene	6	6	100	0.0066 J	0.027 J	0.015
Benzothiophene	6	2	33	0.18 J	0.32 J	0.25
Biphenyl (1,1'-Biphenyl)	6	1	17	0.023 J	0.023 J	0.023
Carbazole	6	0	0	--	--	--
Chrysene	6	6	100	0.0048	0.027	0.013
Decalin, cis- & trans-	6	4	67	0.026 J	0.62	0.24
Dibenzo(a,h)anthracene and Dibenzo(a,c)anthracene	6	2	33	0.00012 J	0.00018 J	0.00015
Dibenzothiophene	6	6	100	0.016 J	0.37	0.13
Fluoranthene	6	6	100	0.09 J	0.38 J	0.21
Fluorene	6	3	50	0.039 J	0.84	0.4
Indeno(1,2,3-c,d)pyrene	6	6	100	0.0001 J	0.00052 J	0.00027
Naphthalene	6	6	100	0.12 J	3.3 J	1.1
Perylene	6	0	0	--	--	--
Phenanthrene	6	6	100	0.018 J	1.1	0.31
Pyrene	6	6	100	0.15 J	0.52 J	0.31
Retene	6	3	50	0.0037	0.0077	0.0063

Table 6b
Porewater Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Alkylated Polycyclic Aromatic Hydrocarbons (SPME) (µg/L)						
C1-Benzanthracenes/Chrysenes	6	6	100	0.002	0.0087	0.0049
C1-Benzo(b)thiophene	6	6	100	0.083 J	1.1	0.34
C1-Decalins	6	6	100	0.081	0.98	0.32
C1-Dibenzothiophenes	6	6	100	0.03	0.56	0.21
C1-Fluoranthenes/Pyrenes	6	6	100	0.044	0.18	0.098
C1-Fluorenes	6	6	100	0.044	0.69	0.25
C1-Naphthalenes	6	6	100	0.062 J	3.5	0.83
C1-Phenanthrenes/Anthracenes	6	6	100	0.034	0.92	0.35
C2-Benzanthracenes/Chrysenes	6	6	100	0.00096	0.0038	0.0023
C2-Benzo(b)thiophene	6	6	100	0.044 J	0.44	0.18
C2-Decalins	6	6	100	0.1	0.74	0.25
C2-Dibenzothiophenes	6	6	100	0.03	0.22	0.097
C2-Fluorenes	6	6	100	0.097	0.65	0.29
C2-Naphthalenes	6	6	100	0.13	6.2	1.9
C2-Phenanthrenes/Anthracenes	6	6	100	0.046	0.47	0.2
C3-Benzanthracenes/Chrysenes	6	2	33	0.0018	0.0018	0.0018
C3-Benzo(b)thiophene	6	6	100	0.051	0.52	0.2
C3-Decalins	6	4	67	0.031	0.21	0.09
C3-Dibenzothiophenes	6	6	100	0.017	0.084	0.043
C3-Fluorenes	6	6	100	0.047	0.21	0.1
C3-Naphthalenes	6	6	100	0.27	4.4	1.7
C3-Phenanthrenes/Anthracenes	6	6	100	0.016	0.088	0.042
C4-Benzanthracenes/Chrysenes	6	0	0	--	--	--
C4-Benzo(b)thiophene	6	6	100	0.021	0.17	0.068
C4-Decalins	6	5	83	0.011	0.11	0.039
C4-Dibenzothiophenes	6	6	100	0.0036	0.017	0.0085
C4-Naphthalenes	6	6	100	0.16	1.2	0.53
C4-Phenanthrenes/Anthracenes	6	6	100	0.0029	0.015	0.0077
PCB Congeners (SPME) (ng/L)						
PCB-001	6	6	100	0.2	10	2.5
PCB-002	6	6	100	0.0049 J	0.2	0.061
PCB-003	6	6	100	0.035	2	0.52
PCB-004	6	6	100	1.1	9.3	3.3
PCB-005	6	6	100	0.02 J	0.24	0.081
PCB-006	6	6	100	0.14	1.2	0.47
PCB-007	6	6	100	0.037 J	0.35	0.12
PCB-008	6	6	100	0.6	4.8	1.9
PCB-009	6	6	100	0.044 J	0.48	0.16
PCB-010	6	6	100	0.061	0.41	0.15
PCB-011	6	6	100	0.071	0.12	0.085
PCB-012/013	6	6	100	0.032 J	0.24	0.11
PCB-014	6	0	0	--	--	--
PCB-015	6	6	100	0.16	0.97	0.45
PCB-016	6	6	100	0.6	4.5	1.7
PCB-017	6	6	100	0.63	4.1	1.6

Table 6b
Porewater Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-018/030	6	6	100	0.95	6	2.4
PCB-019	6	6	100	0.25	1.1	0.52
PCB-020/028	6	6	100	0.51	2.4	1.2
PCB-021/033	6	6	100	0.27	1.8	0.75
PCB-022	6	6	100	0.18	0.9	0.42
PCB-023	6	1	17	0.0035 J	0.0035 J	0.0035
PCB-024	6	6	100	0.016	0.11	0.046
PCB-025	6	6	100	0.042	0.17	0.091
PCB-026/029	6	6	100	0.087	0.47	0.22
PCB-027	6	6	100	0.084	0.46	0.19
PCB-031	6	6	100	0.41	2	0.96
PCB-032	6	6	100	0.31	1.8	0.72
PCB-034	6	5	83	0.0016 J	0.0079	0.0042
PCB-035	6	6	100	0.0045 J	0.024	0.011
PCB-036	6	0	0	--	--	--
PCB-037	6	6	100	0.07	0.33	0.15
PCB-038	6	0	0	--	--	--
PCB-039	6	3	50	0.0022 J	0.005 J	0.0036
PCB-040/071	6	6	100	0.12	0.6	0.27
PCB-041	6	6	100	0.041	0.25	0.098
PCB-042	6	6	100	0.092	0.43	0.19
PCB-043	6	6	100	0.012	0.061	0.027
PCB-044/047/065	6	6	100	0.32	1.4	0.65
PCB-045	6	6	100	0.11	0.6	0.27
PCB-046	6	6	100	0.041	0.19	0.091
PCB-048	6	6	100	0.07	0.39	0.16
PCB-049/069	6	6	100	0.17	0.66	0.32
PCB-050/053	6	6	100	0.088	0.37	0.18
PCB-051	6	6	100	0.046	0.15	0.072
PCB-052	6	6	100	0.35	1.4	0.71
PCB-054	6	6	100	0.015	0.062	0.028
PCB-055	6	5	83	0.0023 J	0.0086	0.0063
PCB-056	6	6	100	0.046	0.21	0.11
PCB-057	6	5	83	0.0006 J	0.0024	0.0014
PCB-058	6	3	50	0.00036 J	0.0013 J	0.00069
PCB-059/062/075	6	6	100	0.024	0.11	0.051
PCB-060	6	6	100	0.029	0.13	0.067
PCB-061/070/074/076	6	6	100	0.18	0.84	0.42
PCB-063	6	6	100	0.0042	0.019	0.01
PCB-064	6	6	100	0.11	0.48	0.23
PCB-066	6	6	100	0.082	0.36	0.18
PCB-067	6	6	100	0.0029 J	0.015	0.0079
PCB-068	6	5	83	0.00052 J	0.0015 J	0.0011
PCB-072	6	5	83	0.00066 J	0.002	0.0014
PCB-073	6	6	100	0.0013 J	0.0031	0.0018
PCB-077	6	6	100	0.0057	0.024	0.013

Table 6b
Porewater Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-078	6	1	17	0.00093 J	0.00093 J	0.00093
PCB-079	6	6	100	0.00065 J	0.0031	0.0018
PCB-080	6	1	17	0.00085 J	0.00085 J	0.00085
PCB-081	6	2	33	0.0013	0.0023 J	0.0018
PCB-082	6	6	100	0.014	0.075	0.034
PCB-083	6	6	100	0.0083	0.029	0.014
PCB-084	6	6	100	0.06	0.27	0.13
PCB-085/116	6	6	100	0.015	0.08	0.036
PCB-086/087/097/108/119/125	6	6	100	0.064	0.32	0.15
PCB-088	6	0	0	--	--	--
PCB-089	6	6	100	0.0024 J	0.011	0.005
PCB-090/101/113	6	6	100	0.11	0.55	0.25
PCB-091	6	6	100	0.022	0.13	0.053
PCB-092	6	6	100	0.02	0.097	0.047
PCB-093/100	6	6	100	0.0033 J	0.036	0.011
PCB-094	6	6	100	0.0015 J	0.0065	0.003
PCB-095	6	6	100	0.15	0.72	0.33
PCB-096	6	6	100	0.004 J	0.026	0.0099
PCB-098	6	1	17	0.0014 J	0.0014 J	0.0014
PCB-099	6	6	100	0.036	0.24	0.096
PCB-102	6	6	100	0.005	0.024	0.011
PCB-103	6	6	100	0.0021 J	0.017	0.0049
PCB-104	6	6	100	0.00057 J	0.0031	0.0016
PCB-105	6	6	100	0.02	0.11	0.052
PCB-106	6	1	17	0.0014 J	0.0014 J	0.0014
PCB-107/124	6	6	100	0.0022 J	0.0095	0.005
PCB-109	6	6	100	0.0039 J	0.019	0.0088
PCB-110	6	6	100	0.11	0.46	0.23
PCB-111	6	1	17	0.00087 J	0.00087 J	0.00087
PCB-112	6	0	0	--	--	--
PCB-114	6	6	100	0.0015 J	0.0073	0.0038
PCB-115	6	0	0	--	--	--
PCB-117	6	6	100	0.0013 J	0.0087	0.0047
PCB-118	6	6	100	0.047	0.23	0.11
PCB-120	6	2	33	0.00063 J	0.00097 J	0.0008
PCB-121	6	0	0	--	--	--
PCB-122	6	5	83	0.00087 J	0.0046	0.0024
PCB-123	6	6	100	0.00074 J	0.0045	0.0023
PCB-126	6	3	50	0.00081 J	0.0023	0.0015
PCB-127	6	1	17	0.00091 J	0.00091 J	0.00091
PCB-128/166	6	6	100	0.0045	0.04	0.015
PCB-129/138/163	6	6	100	0.042	0.33	0.13
PCB-130	6	6	100	0.0029	0.019	0.008
PCB-131	6	6	100	0.00099 J	0.0064	0.0028
PCB-132	6	6	100	0.021	0.16	0.06
PCB-133	6	5	83	0.00056 J	0.0037	0.0018

Table 6b
Porewater Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-134	6	6	100	0.0048	0.035	0.013
PCB-135/151	6	6	100	0.023	0.19	0.065
PCB-136	6	6	100	0.017 J	0.19	0.058
PCB-137	6	6	100	0.0014 J	0.014	0.0055
PCB-139/140	6	6	100	0.00083 J	0.0068	0.0028
PCB-141	6	6	100	0.0096	0.086	0.03
PCB-142	6	1	17	0.0015 J	0.0015 J	0.0015
PCB-143	6	2	33	0.0012 J	0.0013 J	0.0012
PCB-144	6	6	100	0.0028	0.027	0.0095
PCB-145	6	1	17	0.0014 J	0.0014 J	0.0014
PCB-146	6	6	100	0.005	0.037	0.014
PCB-147/149	6	6	100	0.046	0.38	0.13
PCB-148	6	2	33	0.00092 J	0.0016	0.0013
PCB-150	6	3	50	0.00085 J	0.012	0.0046
PCB-152	6	3	50	0.00045 J	0.0017 J	0.0011
PCB-153/168	6	6	100	0.032	0.28	0.098
PCB-154	6	4	67	0.00064 J	0.023	0.007
PCB-155	6	2	33	0.0012 J	0.0022	0.0017
PCB-156/157	6	6	100	0.0026	0.021	0.0096
PCB-158	6	6	100	0.0033 J	0.027	0.011
PCB-159	6	1	17	0.00092 J	0.00092 J	0.00092
PCB-160	6	1	17	0.0011 J	0.0011 J	0.0011
PCB-161	6	1	17	0.00099 J	0.00099 J	0.00099
PCB-162	6	2	33	0.00043 J	0.0011 J	0.00076
PCB-164	6	6	100	0.0029	0.019	0.0078
PCB-165	6	1	17	0.0012 J	0.0012 J	0.0012
PCB-167	6	6	100	0.00088 J	0.0065	0.0032
PCB-169	6	2	33	0.0001 J	0.0018	0.00095
PCB-170	6	6	100	0.0038	0.053	0.017
PCB-171/173	6	6	100	0.0015 J	0.024	0.0074
PCB-172	6	6	100	0.00069 J	0.0086	0.003
PCB-174	6	6	100	0.0063	0.083	0.025
PCB-175	6	4	67	0.00027 J	0.0034	0.0016
PCB-176	6	6	100	0.0012 J	0.023	0.0061
PCB-177	6	6	100	0.0032	0.043	0.013
PCB-178	6	6	100	0.0014 J	0.02	0.0062
PCB-179	6	6	100	0.005	0.069	0.019
PCB-180/193	6	6	100	0.0082	0.11	0.036
PCB-181	6	1	17	0.00097 J	0.00097 J	0.00097
PCB-182	6	1	17	0.00078 J	0.00078 J	0.00078
PCB-183	6	6	100	0.0036	0.046	0.015
PCB-184	6	1	17	0.001 J	0.001 J	0.001
PCB-185	6	6	100	0.00052 J	0.0061	0.0021
PCB-186	6	1	17	0.0013 J	0.0013 J	0.0013
PCB-187	6	6	100	0.007	0.093	0.028
PCB-188	6	2	33	0.0015	0.0022	0.0019

Table 6b
Porewater Statistical Summary

	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
PCB-189	6	4	67	0.00014 J	0.0015	0.00077
PCB-190	6	6	100	0.00049 J	0.0082	0.0028
PCB-191	6	3	50	0.00095 J	0.0018	0.0013
PCB-192	6	1	17	0.00077 J	0.00077 J	0.00077
PCB-194	6	6	100	0.00067 J	0.011	0.0038
PCB-195	6	6	100	0.00035 J	0.0068	0.002
PCB-196	6	6	100	0.00075 J	0.011	0.0034
PCB-197	6	3	50	0.00038 J	0.0013	0.00094
PCB-198/199	6	6	100	0.0014 J	0.022	0.007
PCB-200	6	3	50	0.0014 J	0.006	0.003
PCB-201	6	6	100	0.00026 J	0.0037 J	0.0013
PCB-202	6	6	100	0.00058 J	0.007	0.0024
PCB-203	6	6	100	0.00053 J	0.011	0.0037
PCB-204	6	1	17	0.001 J	0.001 J	0.001
PCB-205	6	3	50	0.00035 J	0.0014	0.00072
PCB-206	6	6	100	0.00021 J	0.0031	0.0014
PCB-207	6	3	50	0.00039 J	0.00093	0.00066
PCB-208	6	4	67	0.00018 J	0.0016	0.00096
PCB-209	6	5	83	0.00014 J	0.0016	0.00074

Notes:

Percent detected results are rounded to the nearest whole number. Minimum, maximum, and arithmetic average results are rounded to two significant figures, except where trailing zeros are not shown, resulting in one significant figure.

-- : indicates no information that is appropriate or available

J: estimated value

Acronyms:

µg/L: micrograms per liter

Max: maximum

Min: minimum

ng/L: nanograms per liter

PCB: polychlorinated biphenyl

SPME: solid phase microextraction

Table 7
Vertical Hydraulic Gradient Data Collection Summary

Station ID	VHG Deployment ID	Actual Coordinates[1,2]		Date/Time VHG Rod Deployed	Date/Time VHG Rod Retrieved	VHG Rod Top Transducer Interval (feet below mudline)	VHG Rod Bottom Transducer Interval (feet below mudline)
		Easting (X)	Northing (Y)				
EB071SC	EB071SP	1005857.66	200182.00	12/13/2019 13:05	12/18/2019 16:09	0.0	5.0
EB072SC	EB072SP	1005896.81	200209.97	12/13/2019 12:25	12/18/2019 15:28	0.0	5.0
EB073SC	EB073SP	1005939.66	200161.82	12/13/2019 11:50	12/18/2019 15:51	0.0	5.0
EB074SC	EB074SP	1006018.16	200188.90	12/13/2019 11:05	12/18/2019 15:59	0.0	5.0
EB075SC	EB075SP	1006152.04	200150.22	12/13/2019 10:05	12/18/2019 15:20	0.0	5.0
EB076SC	EB076SP	1006238.53	200118.56	12/13/2019 9:25	12/18/2019 15:00	0.0	5.0

Notes:
1. Actual differentially corrected coordinates for VHG rod deployment locations
2. Horizontal datum is NAD83 NYLI, State Plane feet

Acronyms:
VHG: vertical hydraulic gradient
NAD83: North American Datum of 1983
NYLI: New York Long Island
ID: identification

Table 8a
Upland Geotechnical Sample Collection and Piezometer Summary

Station ID	Date Collected	Actual Coordinates[1,2]		Collection Method	Penetration Depth (feet)	Ground Surface Elevation[3]	Piezometer Well Screen Interval (feet below ground surface)	Geotechnical Sample Interval (feet below ground surface)	Geotechnical Sample ID	Geotechnical Testing		
		Easting (X)	Northing (Y)							Classification[4]	Undisturbed Testing[5]	Archive
EB080MW	11/18/2019	1006082.22	200078.11	Sonic Drill Rig	25	4.9	4.5 - 14.3	10 - 20	EB080MW-305365-20191119	X	X	X
								12 - 15	EB080MW-365457-20191119	X	--	X
EB080SO	11/13/2019	1006193.96	200054.18	Hollow-Stem Auger	52	2.5	--	30 - 35.6	EB080SO-9141085-20191119	X	--	X
EB081MW	11/18/2019	1006186.00	200053.96	Sonic Drill Rig	27	4.6	4.5 - 14.3	5.0 - 9.8	EB081MW-152298-20191119	X	--	X
								10 - 12	EB081MW-305366-20191119	X	X	X
EB081SO	11/12/2019	1006075.25	200080.06	Hollow-Stem Auger	50	4.9	--	30 - 40.8	EB081SO-9141243-20191119	X	--	X
EB082MW	11/19/2020	1006129.24	199980.56	Sonic Drill Rig	15	5.1	4.5 - 14.3	--	--	--	--	--
EB083SO-A	11/14/2020	1006204.21	200179.47	Hollow-Stem Auger	52	3.0	--	41.2 - 42	EB083SO-A-12571280-20191119	X	--	X
							--	45 - 46.5	EB083SO-A-13721418-20191119	X	X	X
EB083SO-B	11/19/2020	1006197.72	200180.10	Sonic Drill Rig	27	3.7	--	21.1 - 23.3	EB083SO-B-642711-20191119	X	--	X
							--	21.1 - 23.3	EB1083SO-B-642711-20191119	X	--	X
							--	25 - 27	EB083SO-B-762823-20191119	X	X	X
EB084SO-B	11/19/2020	1006273.62	200117.93	Sonic Drill Rig	27	4.2	--	10 - 11.2	EB084SO-B-305340-20191119	X	--	X
							--	20.9 - 24	EB084SO-B-637730-20191119	X	--	X
							--	25 - 27	EB084SO-B-762823-20191119	X	X	X

Notes:
--: indicates no information is applicable or available
1. Actual differentially corrected coordinates and mudlines for upland geotechnical samples
2. Horizontal datum is NAD83 NYLI, State Plane feet
3. Vertical datum is NAVD88
4. Classification testing included: grain size, Atterberg limits, moisture content, laboratory soil classification, SPT, vane shear, and penetrometer testing
5. Undisturbed testing included CU triaxial sheer strength and permeability testing

Acronyms:
CU: confined undrained
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988
NYLI: New York Long Island
SPT: standard penetration testing
ID: identification

Table 8b
Upland Geotechnical Statistical Summary

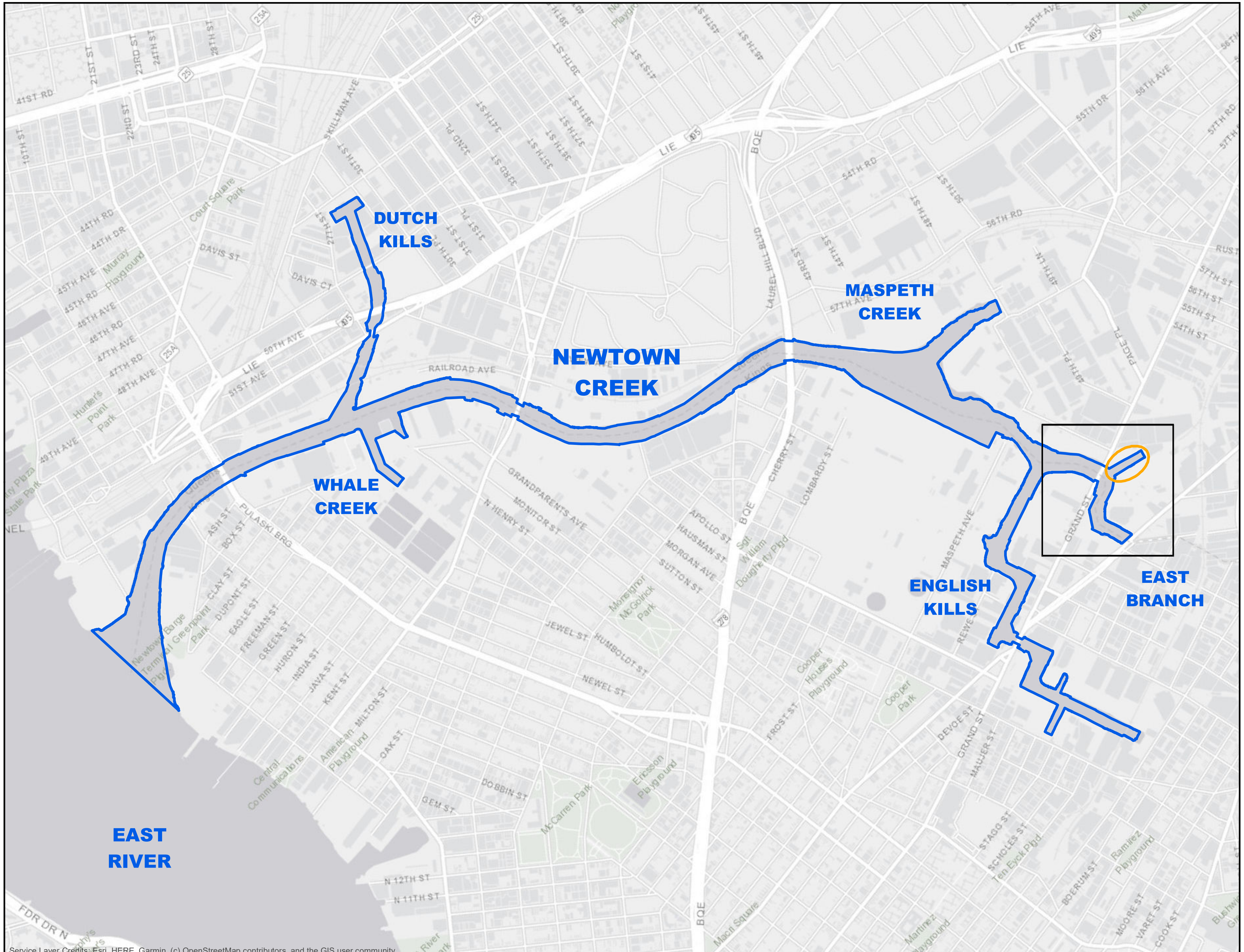
	Count Results	Count Detects	Percent Detected	Min Detected Result	Max Detected Result	Arithmetic Average Detected Result
Conventional Parameters (unitless)						
Plastic limit	13	3	23	14	55	37
Plasticity index	13	3	23	11	20	16
Liquid limit	13	3	23	25	72	53
Conventional Parameters (wt%)						
Moisture (water) content	13	13	100	14	67	33
Grain Size (wt%)						
Gravel	13	10	77	0.1	66	23
Sand	13	13	100	1	93	39
Total fines (reported, not calculated)	13	13	100	6.6	99	43

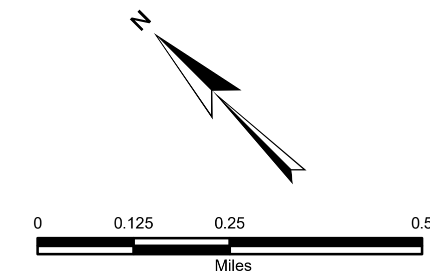
Notes:
Percent detected results are rounded to the nearest whole number. Minimum, maximum, and arithmetic average results are rounded to two significant figures, except where trailing zeros are not shown, resulting in one significant figure.

Acronyms:
Max: maximum
Min: minimum
wt%: weight percent

Figures

FIGURE 1

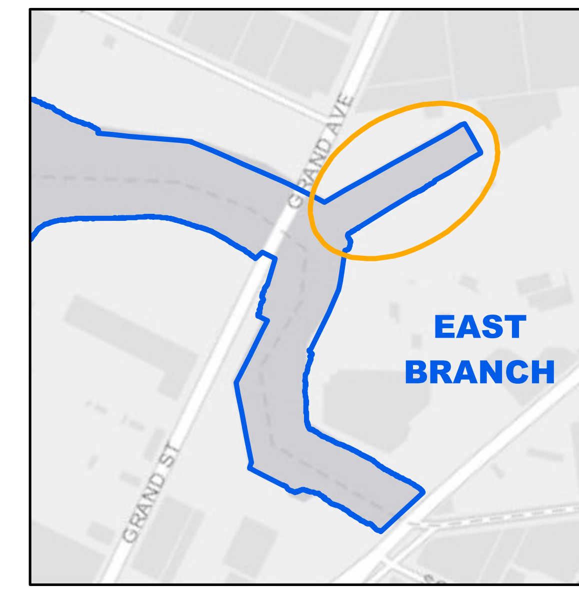




LEGEND

SITE BOUNDARY

TREATABILITY STUDY AREA LOCATION



TREATABILITY STUDY
AREA LOCATION

TREATABILITY STUDY
PRE-DESIGN INVESTIGATION
DATA SUMMARY REPORT
NEWTOWN CREEK
BROOKLYN AND QUEENS, NEW YORK

Natural Resource Technology
AN OBG COMPANY

FIGURE 2

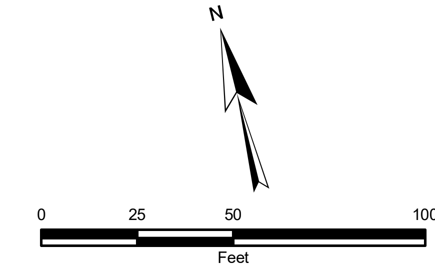
LEGEND

- TREATABILITY STUDY AREA
- PLANNED DREDGE EXTENT
- PLANNED *IN SITU* SOLIDIFICATION EXTENT
- PLANNED SOFT SEDIMENT CAP EXTENT
- PLANNED ARMORED SOFT SEDIMENT CAP EXTENT

PLANNED EXTENT OF TREATABILITY STUDY TREATMENT AREAS

TREATABILITY STUDY
PRE-DESIGN INVESTIGATION
DATA SUMMARY REPORT
NEWTOWN CREEK
BROOKLYN AND QUEENS, NEW YORK

Natural Resource Technology
AN OBG COMPANY



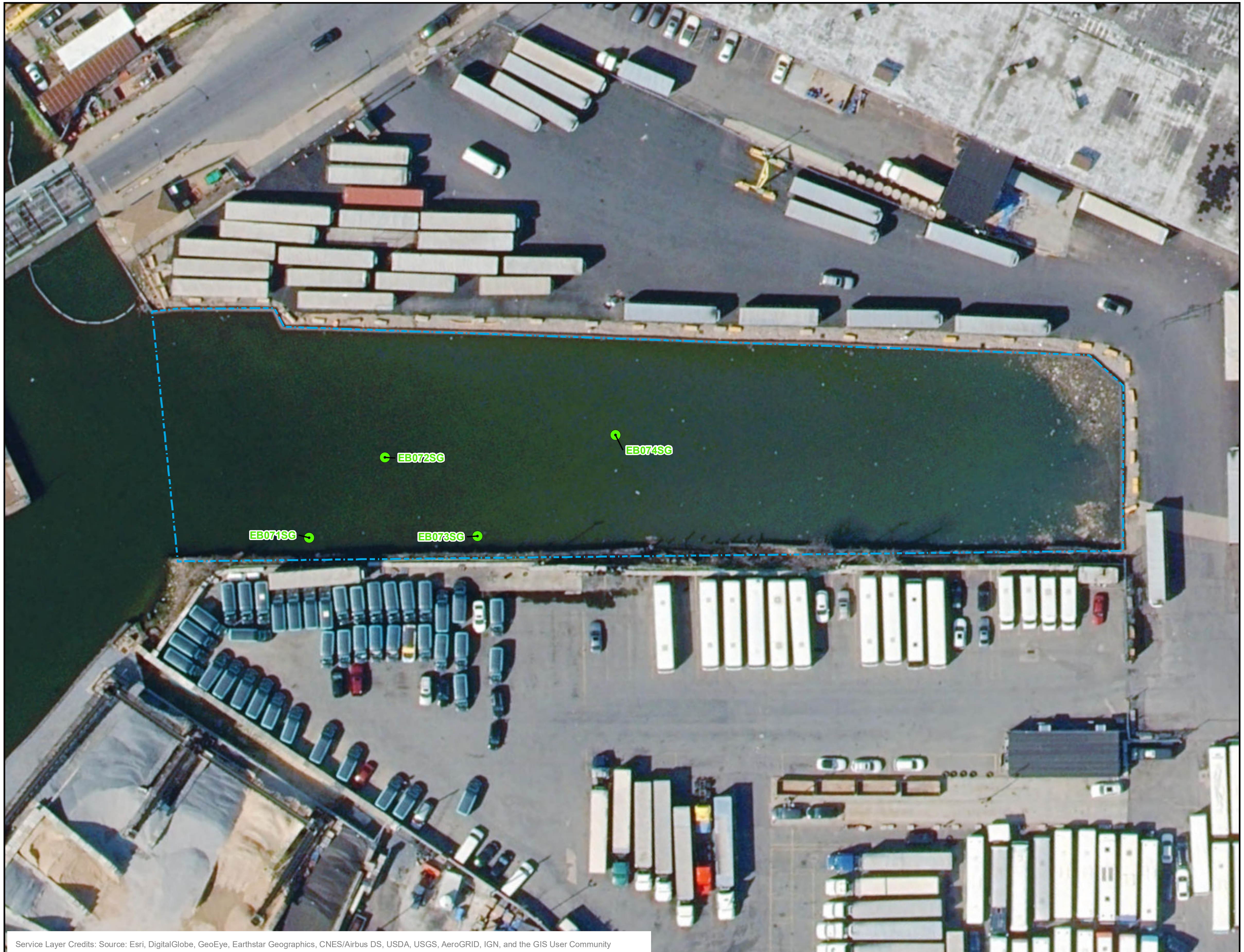
LEGEND

- ACTUAL WASTE CHARACTERIZATION SEDIMENT SAMPLING LOCATION
- TREATABILITY STUDY AREA
- PLANNED DREDGE EXTENT

ACTUAL WASTE CHARACTERIZATION SEDIMENT SAMPLING LOCATIONS

TREATABILITY STUDY
PRE-DESIGN INVESTIGATION
DATA SUMMARY REPORT
NEWTOWN CREEK
BROOKLYN AND QUEENS, NEW YORK

Natural Resource Technology
AN OBG COMPANY



LEGEND

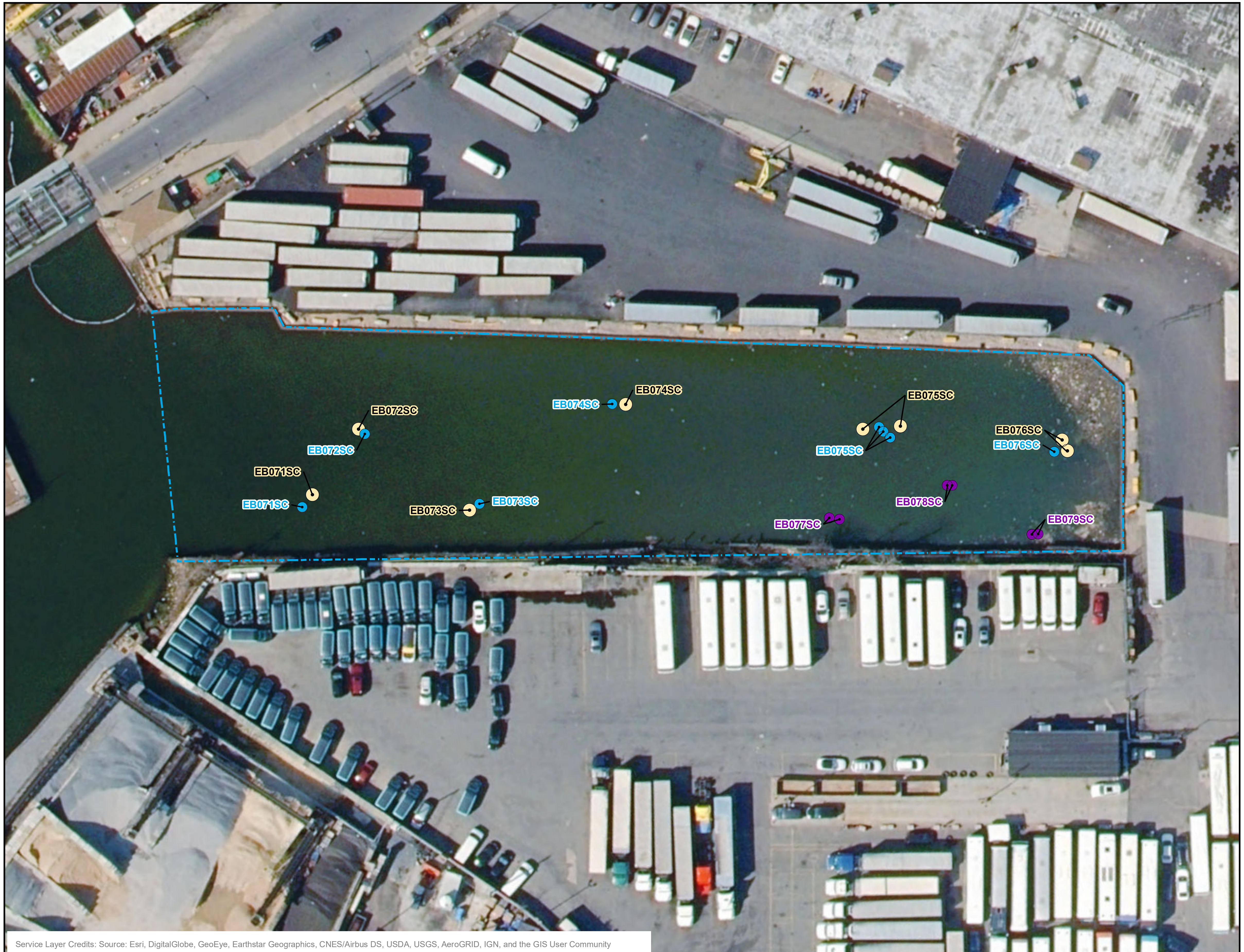
ACTUAL SURFACE SEDIMENT SAMPLING LOCATION

TREATABILITY STUDY AREA

ACTUAL SURFACE SEDIMENT SAMPLING LOCATIONS

TREATABILITY STUDY
PRE-DESIGN INVESTIGATION
DATA SUMMARY REPORT
NEWTOWN CREEK
BROOKLYN AND QUEENS, NEW YORK

Natural Resource Technology
AN OBG COMPANY



N

0 25 50 100
Feet

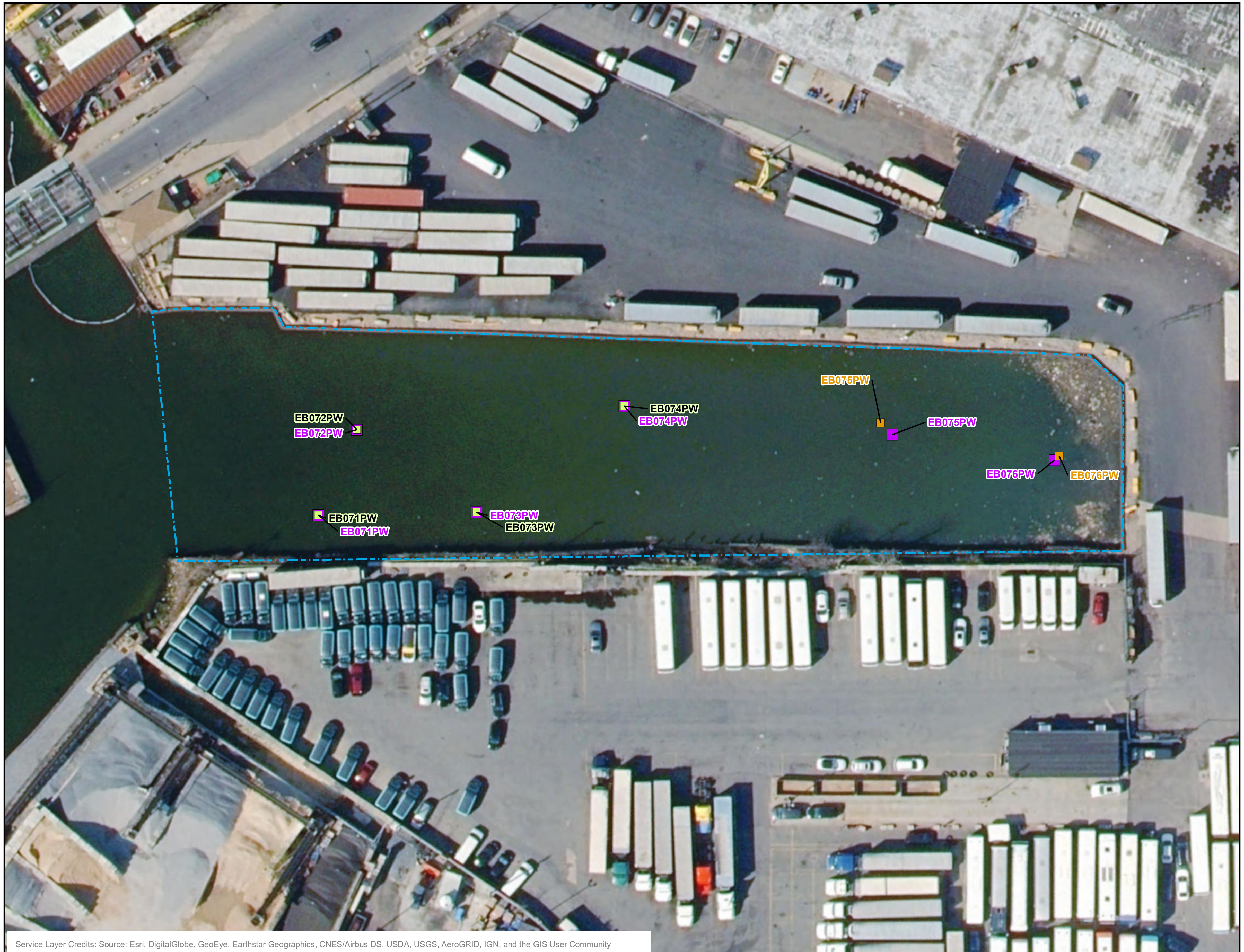
LEGEND

- ACTUAL SUBSURFACE SEDIMENT AND NATIVE MATERIAL SAMPLING LOCATION - GEOTECHNICAL
- ACTUAL SUBSURFACE SEDIMENT AND NATIVE MATERIAL SAMPLING LOCATION - ISS
- ACTUAL SUBSURFACE SEDIMENT SAMPLING LOCATION - SEDIMENT CHEMISTRY
- TREATABILITY STUDY AREA

ACTUAL SUBSURFACE SEDIMENT AND NATIVE MATERIAL SAMPLING LOCATIONS

TREATABILITY STUDY
PRE-DESIGN INVESTIGATION
DATA SUMMARY REPORT
NEWTOWN CREEK
BROOKLYN AND QUEENS, NEW YORK

Natural Resource Technology
AN OBG COMPANY



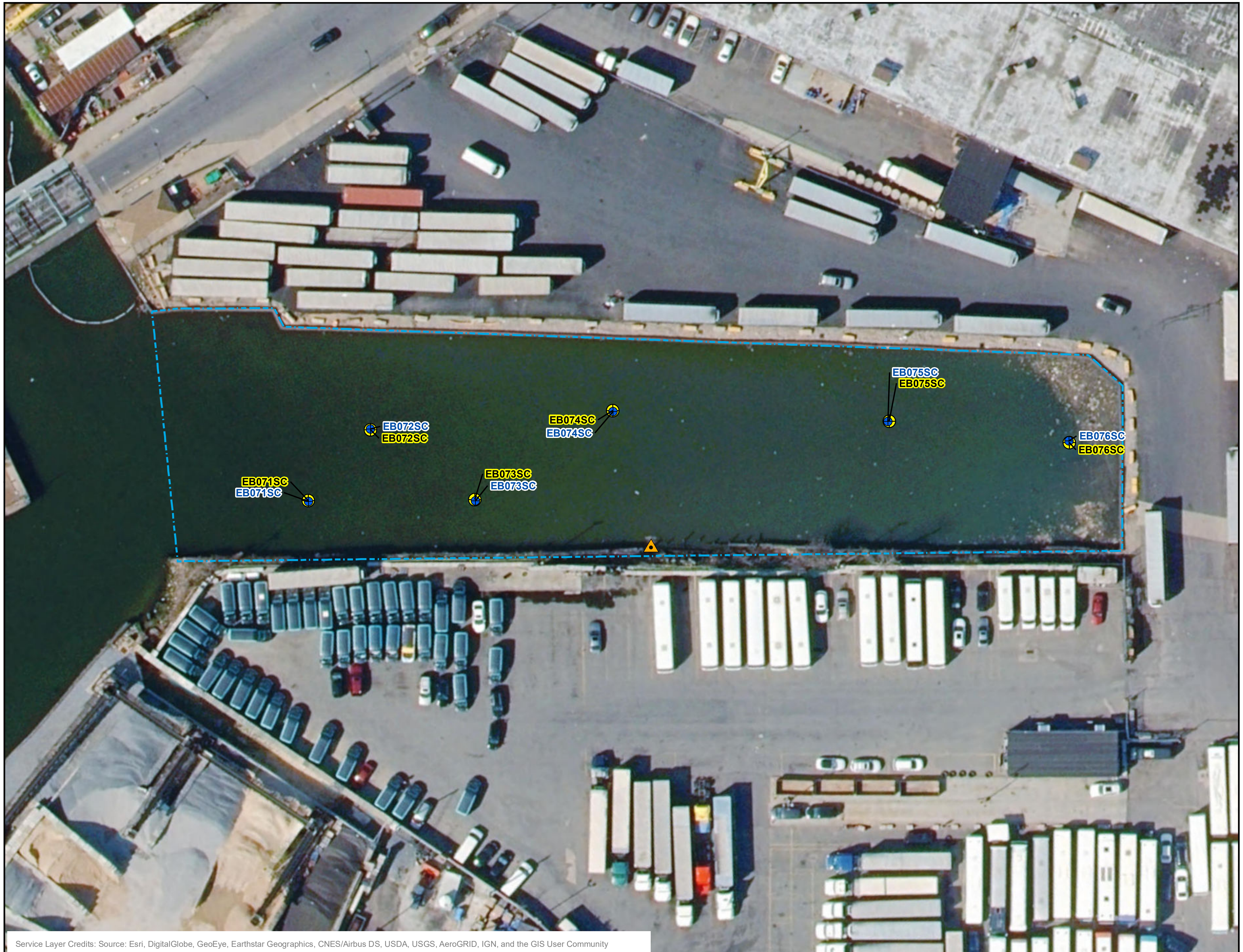
LEGEND

- ACTUAL POREWATER SAMPLING LOCATION - PEEPER
- ACTUAL POREWATER SAMPLING LOCATION - SPME
- ACTUAL POREWATER SAMPLING LOCATION - TEMPORARY WELL
- TREATABILITY STUDY AREA

ACTUAL POREWATER SAMPLING LOCATIONS

TREATABILITY STUDY
PRE-DESIGN INVESTIGATION
DATA SUMMARY REPORT
NEWTOWN CREEK
BROOKLYN AND QUEENS, NEW YORK

Natural Resource Technology
AN OBG COMPANY



LEGEND

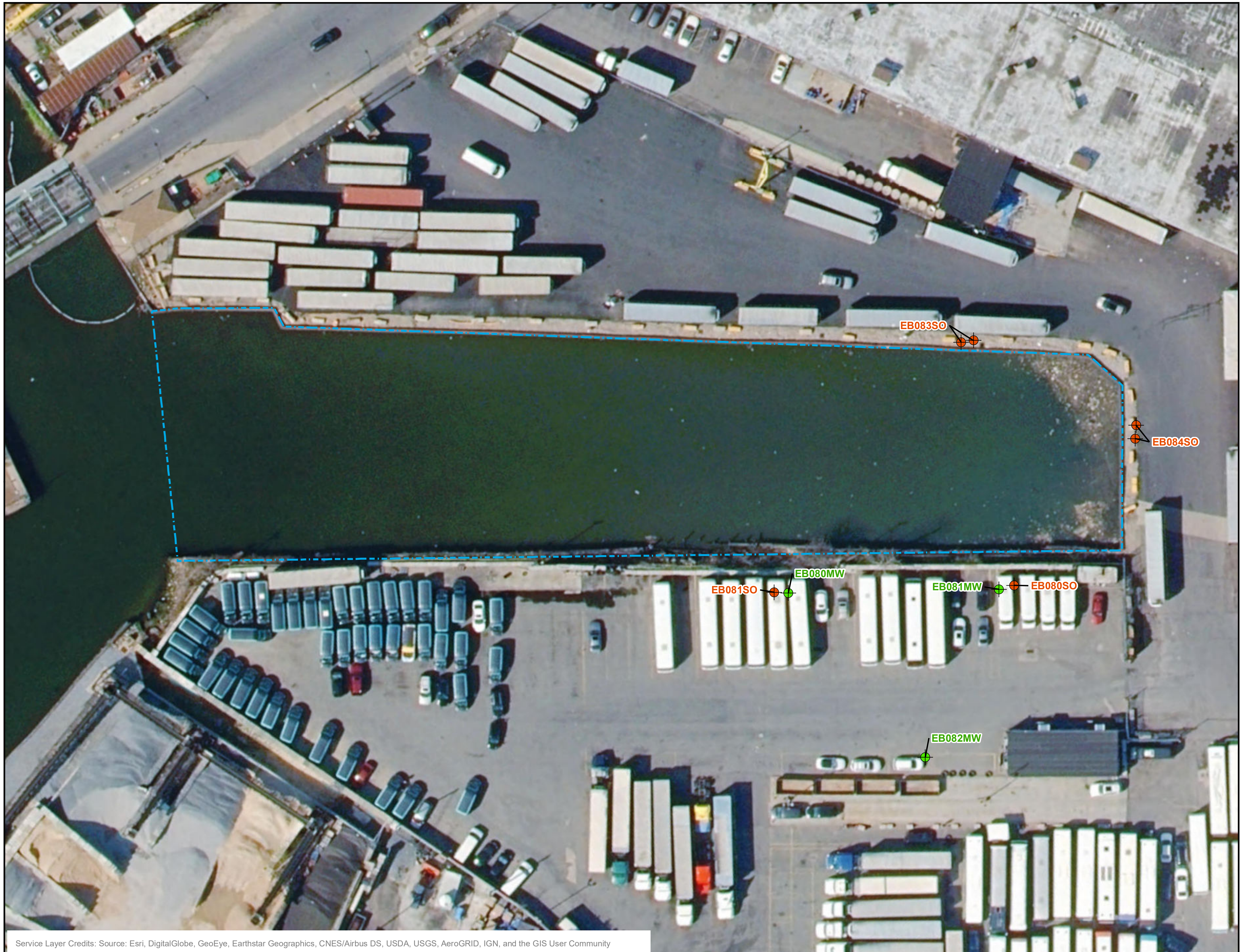
- ACTUAL VERTICAL HYDRAULIC GRADIENT SAMPLING LOCATION - GRAVITY DRAINAGE
- ACTUAL VERTICAL HYDRAULIC GRADIENT SAMPLING LOCATION - VHG PROBE
- TIDE GAUGE
- TREATABILITY STUDY AREA

ACTUAL VERTICAL HYDRAULIC GRADIENT SAMPLING LOCATIONS

TREATABILITY STUDY
PRE-DESIGN INVESTIGATION
DATA SUMMARY REPORT
NEWTOWN CREEK
BROOKLYN AND QUEENS, NEW YORK

Natural Resource Technology
AN OBG COMPANY

FIGURE 8



LEGEND

- ACTUAL UPLAND SOIL GEOTECHNICAL SAMPLING LOCATION
- ACTUAL UPLAND HYDROLOGIC MEASUREMENT AND SOIL GEOTECHNICAL SAMPLING LOCATION
- TREATABILITY STUDY AREA

ACTUAL UPLAND HYDROLOGIC MEASUREMENT AND GEOTECHNICAL SOIL SAMPLING LOCATIONS

TREATABILITY STUDY
PRE-DESIGN INVESTIGATION
DATA SUMMARY REPORT
NEWTOWN CREEK
BROOKLYN AND QUEENS, NEW YORK

Natural Resource Technology
AN OBG COMPANY